

No. 25-1311

In the
Supreme Court of the United States

APPLE INC.,

Petitioner,

v.

EPIC GAMES, INC.,

Respondent.

ON WRIT OF CERTIORARI TO THE UNITED STATES
COURT OF APPEALS FOR THE NINTH CIRCUIT

JOINT APPENDIX

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ITEMS PREVIOUSLY REPRODUCED

In accordance with Supreme Court Rule 26.1, the following items have been omitted in printing this joint appendix because they appear on the following pages of the appendix to the Petition for a Writ of Certiorari (filed May 21, 2026):

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[Exhibit C]

[web page navigation bar omitted]

App Store Review Guidelines

Apps are changing the world, enriching people's lives, and enabling developers like you to innovate like never before. As a result, the App Store has grown into an exciting and vibrant ecosystem for millions of developers and more than a billion users.

Whether you are a first time developer or a large team of experienced programmers, we are excited that you are creating apps for the App Store and want to help you understand our guidelines so you can be confident your app will get through the review process quickly.

Introduction Introduction

Before You Submit	The guiding principle of the App Store is simple - we want to provide a safe experience for users to get apps and a great opportunity for all developers to be successful. We do this by offering a highly curated App Store where every app is reviewed by experts and an editorial team helps users discover new apps every day.
1. Safety	
2. Performance	
3. Business	
4. Design	
5. Legal	
After You Submit	For everything else there is always the open Internet. If the App Store model and guidelines are not best for your app or business idea that's okay, we provide Safari for a great web experience too.

On the following pages you will find our latest guidelines arranged into five clear sections: Safety,

JA-2

Performance, Business, Design, and Legal. The App Store is always changing and improving to keep up with the needs of our customers and our products. Your apps should change and improve as well in order to stay on the App Store.

A few other points to keep in mind:

- We have lots of kids downloading lots of apps. Parental controls work great to protect kids, but you have to do your part too. So know that we're keeping an eye out for the kids.
- The App Store is a great way to reach hundreds of millions of people around the world. If you build an app that you just want to show to family and friends, the App Store isn't the best way to do that. Consider using Xcode to install your app on a device for free or use Ad Hoc distribution available to Apple Developer Program members. If you're just getting started, learn more about the Apple Developer Program.
- We strongly support all points of view being represented on the App Store, as long as the apps are respectful to users with differing opinions and the quality of the app experience is great. We will reject apps for any content or

behavior that we believe is over the line. What line, you ask? Well, as a Supreme Court Justice once said, “I’ll know it when I see it”. And we think that you will also know it when you cross it.

- If you attempt to cheat the system (for example, by trying to trick the review process, steal user data, copy another developer’s work, manipulate ratings or App Store discovery) your apps will be removed from the store and you will be expelled from the Developer Program.
- You are responsible for making sure everything in your app complies with these guidelines, including ad networks, analytics services, and third-party SDKs, so review and choose them carefully.
- Some features and technologies that are not generally available to developers may be offered as an entitlement for limited use cases. For example, we offer entitlements for CarPlay Audio, HyperVisor, and Privileged File Operations. Review our documentation on developer.apple.com to learn more about entitlements.

We hope these guidelines help you sail through the App Review process, and that approvals and rejections remain consistent across the board. This is a living document; new apps presenting new questions may result in new rules at any time. Perhaps your app will trigger this. We love this stuff too, and honor what you do. We're really trying our best to create the best platform in the world for you to express your talents and make a living, too.

Before You Submit

To help your app approval go as smoothly as possible, review the common missteps listed below that can slow down the review process or trigger a rejection. This doesn't replace the guidelines or guarantee approval, but making sure you can check every item on the list is a good start. If your app no longer functions as intended or you're no longer actively supporting it, it will be removed from the App Store. Learn more about App Store Improvements.

Make sure you:

- Test your app for crashes and bugs

-
- Ensure that all app information and metadata is complete and accurate
 - Update your contact information in case App Review needs to reach you
 - Provide an active demo account and login information, plus any other hardware or resources that might be needed to review your app (e.g. login credentials or a sample QR code)
 - Enable backend services so that they're live and accessible during review
 - Include detailed explanations of non-obvious features and in-app purchases in the App Review notes, including supporting documentation where appropriate.
 - Check whether your app follows guidance in other documentation, such as:

Development Guidelines

- 📄 UIKit
- 📄 AppKit
- 📄 WatchKit
- 📄 App Extensions
- 📄 iOS Data Storage Guidelines
- 📄 Apple File System

📄 App Store Connect Help

📄 Developer Account Help

Design Guidelines

📄 Human Interface Guidelines

Brand and Marketing Guidelines

📄 Marketing Resources and Identity Guidelines

📄 Apple Pay Marketing Guidelines

📄 Add to Apple Wallet Guidelines

📄 Guidelines for Using Apple Trademarks and Copyrights

1. Safety

When people install an app from the App Store, they want to feel confident that it's safe to do so—that the app doesn't contain upsetting or offensive content, won't damage their device, and isn't likely to cause physical harm from its use. We've outlined the major pitfalls below, but if you're looking to shock and offend people, the App Store isn't the right place for your app.

1.1 Objectionable Content

Apps should not include content that is offensive, insensitive, upsetting, intended to disgust, in exceptionally poor taste, or just

plain creepy. Examples of such content include:

1.1.1 Defamatory, discriminatory, or mean-spirited content, including references or commentary about religion, race, sexual orientation, gender, national/ethnic origin, or other targeted groups, particularly if the app is likely to humiliate, intimidate, or harm a targeted individual or group. Professional political satirists and humorists are generally exempt from this requirement.

1.1.2 Realistic portrayals of people or animals being killed, maimed, tortured, or abused, or content that encourages violence. “Enemies” within the context of a game cannot solely target a specific race, culture, real government, corporation, or any other real entity.

1.1.3 Depictions that encourage illegal or reckless use of weapons and dangerous objects, or facilitate the purchase of firearms or ammunition.

1.1.4 Overtly sexual or pornographic material, defined by Webster’s Dictionary as “explicit descriptions or displays of sexual organs or activities intended to

stimulate erotic rather than aesthetic or emotional feelings.”

1.1.5 Inflammatory religious commentary or inaccurate or misleading quotations of religious texts.

1.1.6 False information and features, including inaccurate device data or trick/joke functionality, such as fake location trackers. Stating that the app is “for entertainment purposes” won’t overcome this guideline. Apps that enable anonymous or prank phone calls or SMS/MMS messaging will be rejected.

1.2 User Generated Content

Apps with user-generated content present particular challenges, ranging from intellectual property infringement to anonymous bullying. To prevent abuse, apps with user-generated content or social networking services must include:

- A method for filtering objectionable material from being posted to the app
- A mechanism to report offensive content and timely responses to concerns
- The ability to block abusive users from the service

- Published contact information so users can easily reach you

Apps with user-generated content or services that end up being used primarily for pornographic content, Chatroulette-style experiences, objectification of real people (e.g. “hot-or-not” voting), making physical threats, or bullying do not belong on the App Store and may be removed without notice. If your app includes user-generated content from a web-based service, it may display incidental mature “NSFW” content, provided that the content is hidden by default and only displayed when the user turns it on via your website.

1.3 Kids Category

The Kids Category is a great way for people to easily find apps that are designed for children. If you want to participate in the Kids Category, you should focus on creating a great experience specifically for younger users. These apps must not include links out of the app, purchasing opportunities, or other distractions to kids unless reserved for a designated area behind a parental gate. Keep in mind that once customers expect your app to follow the Kids Category requirements, it

will need to continue to meet these guidelines in subsequent updates, even if you decide to deselect the category. Learn more about parental gates.

You must comply with applicable privacy laws around the world relating to the collection of data from children online. Be sure to review the Privacy section of these guidelines for more information. In addition, Kids Category apps may not send personally identifiable information or device information to third parties. Apps in the Kids Category should not include third-party analytics or third-party advertising. This provides a safer experience for kids. In limited cases, third-party analytics may be permitted provided that the services do not collect or transmit the IDFA or any identifiable information about children (such as name, date of birth, email address), their location, or their devices. This includes any device, network, or other information that could be used directly or combined with other information to identify users and their devices. Third-party contextual advertising may also be permitted in limited cases provided that the services have publicly documented practices and policies

for Kids Category apps that include human review of ad creatives for age appropriateness.

1.4 Physical Harm

If your app behaves in a way that risks physical harm, we may reject it. For example:

1.4.1 Medical apps that could provide inaccurate data or information, or that could be used for diagnosing or treating patients may be reviewed with greater scrutiny.

- Apps must clearly disclose data and methodology to support accuracy claims relating to health measurements, and if the level of accuracy or methodology cannot be validated, we will reject your app. For example, apps that claim to take x-rays, measure blood pressure, body temperature, blood glucose levels, or blood oxygen levels using only the sensors on the device are not permitted.
- Apps should remind users to check with a doctor in addition to using the app and before making medical decisions.

If your medical app has received regulatory clearance, please

submit a link to that documentation with your app.

1.4.2 Drug dosage calculators must come from the drug manufacturer, a hospital, university, health insurance company, pharmacy or other approved entity, or receive approval by the FDA or one of its international counterparts. Given the potential harm to patients, we need to be sure that the app will be supported and updated over the long term.

1.4.3 Apps that encourage consumption of tobacco and vape products, illegal drugs, or excessive amounts of alcohol are not permitted on the App Store. Apps that encourage minors to consume any of these substances will be rejected. Facilitating the sale of marijuana, tobacco, or controlled substances (except for licensed pharmacies) isn't allowed.

1.4.4 Apps may only display DUI checkpoints that are published by law enforcement agencies, and should never encourage drunk driving or other reckless behavior such as excessive speed.

1.4.5 Apps should not urge customers to participate in

activities (like bets, challenges, etc.) or use their devices in a way that risks physical harm to themselves or others.

1.5 Developer Information

People need to know how to reach you with questions and support issues. Make sure your app and its Support URL include an easy way to contact you; this is particularly important for apps that may be used in the classroom. Failure to include accurate and up-to-date contact information not only frustrates customers, but may violate the law in some countries. Also ensure that Wallet passes include valid contact information from the issuer and are signed with a dedicated certificate assigned to the brand or trademark owner of the pass.

1.6 Data Security

Apps should implement appropriate security measures to ensure proper handling of user information collected pursuant to the Apple Developer Program License Agreement and these Guidelines (see Guideline 5.1 for more information) and prevent its unauthorized use, disclosure, or access by third parties.

2. Performance

2.1 App Completeness

Submissions to App Review, including apps you make available for pre-order, should be final versions with all necessary metadata and fully functional URLs included; placeholder text, empty websites, and other temporary content should be scrubbed before submission. Make sure your app has been tested on-device for bugs and stability before you submit it, and include demo account info (and turn on your back-end service!) if your app includes a login. If you offer in-app purchases in your app, make sure they are complete, up-to-date, and visible to the reviewer, or that you explain why not in your review notes. Please don't treat App Review as a software testing service. We will reject incomplete app bundles and binaries that crash or exhibit obvious technical problems.

2.2 Beta Testing

Demos, betas, and trial versions of your app don't belong on the App Store – use TestFlight instead. Any app submitted for beta distribution via TestFlight should be intended for public distribution and should comply with the App Review

Guidelines. Note, however, that apps using TestFlight cannot be distributed to testers in exchange for compensation of any kind, including as a reward for crowd-sourced funding. Significant updates to your beta build should be submitted to TestFlight App Review before being distributed to your testers. To learn more, visit the TestFlight Beta Testing.

2.3 Accurate Metadata

Customers should know what they're getting when they download or buy your app, so make sure your app description, screenshots, and previews accurately reflect the app's core experience and remember to keep them up-to-date with new versions.

2.3.1 Don't include any hidden, dormant, or undocumented features in your app; your app's functionality should be clear to end users and App Review. All new features, functionality, and product changes must be described with specificity in the Notes for Review section of App Store Connect (generic descriptions will be rejected) and accessible for review. Similarly, you should not market your app on the App Store or offline as

including content or services that it does not actually offer (e.g. iOS-based virus and malware scanners). Egregious or repeated behavior is grounds for removal from the Developer Program. We work hard to make the App Store a trustworthy ecosystem and expect our app developers to follow suit; if you're dishonest, we don't want to do business with you.

2.3.2 If your app includes in-app purchases, make sure your app description, screenshots, and previews clearly indicate whether any featured items, levels, subscriptions, etc. require additional purchases. If you decide to promote in-app purchases on the App Store, ensure that the in-app purchase Display Name, Screenshot and Description are appropriate for a public audience, that you follow the guidance found in Promoting Your In-App Purchases, and that your app properly handles the `SKPaymentTransactionObserver` method so that customers can seamlessly complete the purchase when your app launches.

2.3.3 Screenshots should show the app in use, and not merely the title art, log-in page, or splash screen.

They may also include text and image overlays (e.g. to demonstrate input mechanisms, such as an animated touch point or Apple Pencil) and show extended functionality on device, such as Touch Bar.

2.3.4 Previews are a great way for customers to see what your app looks like and what it does. To ensure people understand what they'll be getting with your app, previews may only use video screen captures of the app itself. Stickers and iMessage extensions may show the user experience in the Messages app. You can add narration and video or textual overlays to help explain anything that isn't clear from the video alone.

2.3.5 Select the most appropriate category for your app, and check out the App Store Category Definitions if you need help. If you're way off base, we may change the category for you.

2.3.6 Answer the age rating questions in App Store Connect honestly so that your app aligns properly with parental controls. If your app is mis-rated, customers might be surprised by what they get, or it could trigger an inquiry

from government regulators. If your app includes media that requires the display of content ratings or warnings (e.g. films, music, games, etc.), you are responsible for complying with local requirements in each territory where your app is available.

2.3.7 Choose a unique app name, assign keywords that accurately describe your app, and don't try to pack any of your metadata with trademarked terms, popular app names, pricing information, or other irrelevant phrases just to game the system. App names must be limited to 30 characters and should not include prices, terms, or descriptions that are not the name of the app. App subtitles are a great way to provide additional context for your app; they must follow our standard metadata rules and should not include inappropriate content, reference other apps, or make unverifiable product claims. Apple may modify inappropriate keywords at any time or take other appropriate steps to prevent abuse.

2.3.8 Metadata should be appropriate for all audiences, so

make sure your app and in-app purchase icons, screenshots, and previews adhere to a 4+ age rating even if your app is rated higher. For example, if your app is a game that includes violence, select images that don't depict a gruesome death or a gun pointed at a specific character. Use of terms like "For Kids" and "For Children" in app metadata is reserved for the Kids Category. Remember to ensure your metadata, including app name and icons (small, large, Apple Watch app, alternate icons, etc.), are similar to avoid creating confusion.

2.3.9 You are responsible for securing the rights to use all materials in your app icons, screenshots, and previews, and you should display fictional account information instead of data from a real person.

2.3.10 Make sure your app is focused on the iOS, Mac, Apple TV or Apple Watch experience, and don't include names, icons, or imagery of other mobile platforms in your app or metadata, unless there is specific, approved interactive functionality. Make sure your app metadata is focused

on the app itself and its experience. Don't include irrelevant information, including but not limited to information about Apple or the development process.

2.3.11 Apps you submit for pre-order on the App Store must be complete and deliverable as submitted. Ensure that the app you ultimately release is not materially different from what you advertise while the app is in a pre-order state. If you make material changes to the app (e.g. change business models), you should restart your pre-order sales.

2.3.12 Apps must clearly describe new features and product changes in their "What's New" text. Simple bug fixes, security updates, and performance improvements may rely on a generic description, but more significant changes must be listed in the notes.

2.4 Hardware Compatibility

2.4.1 To ensure people get the most out of your app, iPhone apps should run on iPad whenever possible. We encourage you to consider building universal apps so customers can use them on all of their devices. Learn more about Universal apps.

2.4.2 Design your app to use power efficiently and be used in a way that does not risk damage to the device. Apps should not rapidly drain battery, generate excessive heat, or put unnecessary strain on device resources. For example, apps should not encourage placing the device under a mattress or pillow while charging or perform excessive write cycles to the solid state drive. Apps, including any third-party advertisements displayed within them, may not run unrelated background processes, such as cryptocurrency mining.

2.4.3 People should be able to use your Apple TV app without the need for hardware inputs beyond the Siri remote or third-party game controllers, but feel free to provide enhanced functionality when other peripherals are connected. If you require a game controller, make sure you clearly explain that in your metadata so customers know they need additional equipment to play.

2.4.4 Apps should never suggest or require a restart of the device or modifications to system settings unrelated to the core functionality of the application. For example,

don't encourage users to turn off Wi-Fi, disable security features, etc.

2.4.5 Apps distributed via the Mac App Store have some additional requirements to keep in mind:

(i) They must be appropriately sandboxed, and follow macOS File System Documentation. They should also only use the appropriate macOS APIs for modifying user data stored by other Apps (e.g. bookmarks, Address Book, or Calendar entries).

(ii) They must be packaged and submitted using technologies provided in Xcode; no third-party installers allowed. They must also be self-contained, single application installation bundles and cannot install code or resources in shared locations.

(iii) They may not auto-launch or have other code run automatically at startup or login without consent nor spawn processes that continue to run without consent after a user has quit the app. They should not automatically add their icons to the Dock or leave short cuts on the user desktop.

(iv) They may not download or install standalone apps, kexts, additional code, or resources to add functionality or significantly change the app from what we see during the review process.

(v) They may not request escalation to root privileges or use setuid attributes.

(vi) They may not present a license screen at launch, require license keys, or implement their own copy protection.

(vii) They must use the Mac App Store to distribute updates; other update mechanisms are not allowed.

(viii) Apps should run on the currently shipping OS and may not use deprecated or optionally installed technologies (e.g. Java, Rosetta)

(ix) Apps must contain all language and localization support in a single app bundle.

2.5 Software Requirements

2.5.1 Apps may only use public APIs and must run on the currently shipping OS. Learn more about public APIs. Keep your apps up-to-date and make sure you phase out any deprecated features, frameworks or

technologies that will no longer be supported in future versions of an OS. Apps should use APIs and frameworks for their intended purposes and indicate that integration in their app description. For example, the HomeKit framework should provide home automation services; and HealthKit should be used for health and fitness purposes and integrate with the Health app.

2.5.2 Apps should be self-contained in their bundles, and may not read or write data outside the designated container area, nor may they download, install, or execute code which introduces or changes features or functionality of the app, including other apps. Educational apps designed to teach, develop, or allow students to test executable code may, in limited circumstances, download code provided that such code is not used for other purposes. Such apps must make the source code provided by the Application completely viewable and editable by the user.

2.5.3 Apps that transmit viruses, files, computer code, or programs that may harm or disrupt the

normal operation of the operating system and/or hardware features, including Push Notifications and Game Center, will be rejected. Egregious violations and repeat behavior will result in removal from the Developer Program.

2.5.4 Multitasking apps may only use background services for their intended purposes: VoIP, audio playback, location, task completion, local notifications, etc. If your app uses location background mode, include a reminder that doing so may dramatically decrease battery life.

2.5.5 Apps must be fully functional on IPv6-only networks.

2.5.6 Apps that browse the web must use the appropriate WebKit framework and WebKit Javascript.

2.5.7 Video streaming content over a cellular network longer than 10 minutes must use HTTP Live Streaming and include a baseline 192 kbps HTTP Live stream.

2.5.8 Apps that create alternate desktop/home screen environments or simulate multi-app widget experiences will be rejected.

2.5.9 Apps that alter or disable the functions of standard switches, such as the Volume Up/Down and Ring/Silent switches, or other native user interface elements or behaviors will be rejected. For example, apps should not block links out to other apps or other features that users would expect to work a certain way. Learn more about proper handling of links.

2.5.10 Apps should not be submitted with empty ad banners or test advertisements.

2.5.11 SiriKit and Shortcuts

(i) Apps integrating SiriKit and Shortcuts should only sign up for intents they can handle without the support of an additional app and that users would expect from the stated functionality. For example, if your app is a meal planning app, you should not incorporate an intent to start a workout, even if the app shares integration with a fitness app.

(ii) Ensure that the vocabulary and phrases in your plist pertains to your app and the Siri functionality of the intents the app has registered for. Aliases must relate directly to your app or company name and should not

be generic terms or include third-party app names or services.

(iii) Resolve the Siri request or Shortcut in the most direct way possible and do not insert ads or other marketing between the request and its fulfillment. Only request a disambiguation when required to complete the task (e.g. asking the user to specify a particular type of workout).

2.5.12 Apps using CallKit or including an SMS Fraud Extension should only block phone numbers that are confirmed spam. Apps that include call-, SMS-, and MMS- blocking functionality or spam identification must clearly identify these features in their marketing text and explain the criteria for their blocked and spam lists. You may not use the data accessed via these tools for any purpose not directly related to operating or improving your app or extension (e.g. you may not use, share, or sell it for tracking purposes, creating user profiles, etc.).

2.5.13 Apps using facial recognition for account authentication must use LocalAuthentication (and not ARKit or other facial recognition

technology) where possible, and must use an alternate authentication method for users under 13 years old.

2.5.14 Apps must request explicit user consent and provide a clear visual and/or audible indication when recording, logging, or otherwise making a record of user activity. This includes any use of the device camera, microphone, screen recordings, or other user inputs.

2.5.15 Apps that enable users to view and select files should include items from the Files app and the user's iCloud documents.

2.5.16 App Clips, widgets, extensions, and notifications should be related to the content and functionality of your app. Additionally, all App Clip features and functionality must be included in the main app binary. App Clips cannot contain advertising.

3. Business

There are many ways to monetize your app on the App Store. If your business model isn't obvious, make sure to explain in its metadata and App Review notes. If we can't understand how your app works or

your in-app purchases aren't immediately obvious, it will delay your review and may trigger a rejection. And while pricing is up to you, we won't distribute apps and in-app purchase items that are clear rip-offs. We'll reject expensive apps that try to cheat users with irrationally high prices.

If we find that you have attempted to manipulate reviews, inflate your chart rankings with paid, incentivized, filtered, or fake feedback, or engage with third-party services to do so on your behalf, we will take steps to preserve the integrity of the App Store, which may include expelling you from the Developer Program.

3.1 Payments

3.1.1 In-App Purchase:

- 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.

- Apps may use in-app purchase currencies to enable customers to “tip” digital content providers in the app.
- Any credits or in-game currencies purchased via in-app purchase may not expire, and you should make sure you have a restore mechanism for any restorable in-app purchases.
- Remember to assign the correct purchasability type or your app will be rejected.
- Apps may enable gifting of items that are eligible for in-app purchase to others. Such gifts may only be refunded to the original purchaser and may not be exchanged.
- Apps distributed via the Mac App Store may host plug-ins or extensions that are enabled with mechanisms other than the App Store.
- Apps offering “loot boxes” or other mechanisms that provide randomized virtual items for

purchase must disclose the odds of receiving each type of item to customers prior to purchase.

- Non-subscription apps may offer a free time-based trial period before presenting a full unlock option by setting up a Non-Consumable IAP item at Price Tier 0 that follows the naming convention: “XX-day Trial.” Prior to the start of the trial, your app must clearly identify its duration, the content or services that will no longer be accessible when the trial ends, and any downstream charges the user would need to pay for full functionality. Learn more about managing content access and the duration of the trial period using Receipts and Device Check.

3.1.2 Subscriptions: Apps may offer auto-renewing in-app purchase subscriptions, regardless of category on the App Store. When incorporating auto-renewable subscriptions into your app, be sure to follow the guidelines below.

3.1.2(a) Permissible uses: If you offer an auto-renewing subscription, you must provide ongoing value to the customer,

and the subscription period must last at least seven days and be available across all of the user's devices. While the following list is not exhaustive, examples of appropriate subscriptions include: new game levels; episodic content; multiplayer support; apps that offer consistent, substantive updates; access to large collections of, or continually updated, media content; software as a service ("SAAS"); and cloud support. In addition:

- Subscriptions may be offered alongside a la carte offerings (e.g. you may offer a subscription to an entire library of films as well the purchase or rental of a single movie).
- You may offer a single subscription that is shared across your own apps and services. Games offered in a streaming game service subscription must be downloaded directly from the App Store, must be designed to avoid duplicate payment by a subscriber, and should not disadvantage non-subscriber customers.
- Subscriptions must work on all of the user's devices where the

app is available. Learn more about sharing a subscription across your apps.

- Apps must not force users to rate the app, review the app, download other apps, or other similar actions in order to access functionality, content, or use of the app.
- As with all apps, those offering subscriptions should allow a user to get what they've paid for without performing additional tasks, such as posting on social media, uploading contacts, checking in to the app a certain number of times, etc.
- Subscriptions may include consumable credits, gems, in-game currencies, etc., and you may offer subscriptions that include access to discounted consumable goods (e.g. a platinum membership that exposes gem-packs for a reduced price).
- If you are changing your existing app to a subscription-based business model, you should not take away the primary functionality existing users have already paid for. For example, let customers who

have already purchased a “full game unlock” continue to access the full game after you introduce a subscription model for new customers.

- Auto-renewing subscription apps may offer a free trial period to customers by providing the relevant information set forth in App Store Connect.
- Apps that attempt to scam users will be removed from the App Store. This includes apps that attempt to trick users into purchasing a subscription under false pretenses or engage in bait-and-switch and scam practices will be removed from the App Store and you may be removed from the Apple Developer Program. Learn more about Subscription Free Trials.
- Apps that offer auto-renewing music and video subscriptions with prior approval by Apple may also be included in pre-defined bundles with cellular data plans offered in cellular carrier apps.

3.1.2(b) Upgrades and Downgrades:

Users should have a seamless upgrade/downgrade experience

and should not be able to inadvertently subscribe to multiple variations of the same thing. Review best practices on managing your subscription upgrade and downgrade options.

3.1.2(c) Subscription Information:

Before asking a customer to subscribe, you should clearly describe what the user will get for the price. How many issues per month? How much cloud storage? What kind of access to your service? Ensure you clearly communicate the requirements described in Schedule 2 of the Apple Developer Program License Agreement, found in Agreements, Tax, and Banking.

3.1.3 Other Purchase Methods:

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.

3.1.3(a) “Reader” Apps: Apps may allow a user to access previously purchased content or content subscriptions (specifically:

magazines, newspapers, books, audio, music, and video). Reader apps may offer account creation for free tiers, and account management functionality for existing customers.

3.1.3(b) Multiplatform Services:

Apps that operate across multiple platforms may allow users to access content, subscriptions, or features they have acquired in your app on other platforms or your web site, including consumable items in multiplatform games, provided those items are also available as in-app purchases within the app.

3.1.3(c) Enterprise Services: If your app is only sold directly by you to organizations or groups for their employees or students (for example professional databases and classroom management tools), you may use purchase methods in addition to in-app purchase to collect those payments. Consumer, single user, or family sales must use in-app purchase.

3.1.3(d) Person-to-Person Experiences: If your app enables the purchase of realtime person-to-person experiences between two individuals (for example tutoring students, medical

consultations, real estate tours, or fitness training), you may use purchase methods other than in-app purchase to collect those payments. One-to-few and one-to-many realtime experiences must use in-app purchase.

3.1.3(e) Goods and Services

Outside of the App: If your app enables people to purchase physical goods or services that will be consumed outside of the app, you must use purchase methods other than in-app purchase to collect those payments, such as Apple Pay or traditional credit card entry.

3.1.3(f) Free Stand-alone Apps:

Free apps acting as a stand-alone companion to a paid web based tool (eg. VOIP, Cloud Storage, Email Services, Web Hosting) do not need to use in-app purchase, provided there is no purchasing inside the app, or calls to action for purchase outside of the app.

3.1.4 Hardware-Specific Content:

In limited circumstances, such as when features are dependent upon specific hardware to function, the app may unlock that functionality without using in-app purchase (e.g. an astronomy app that adds features when synced with a

telescope). App features that work in combination with an approved physical product (such as a toy) on an *optional* basis may unlock functionality without using in-app purchase, provided that an in-app purchase option is available as well. You may not, however, require users to purchase unrelated products or engage in advertising or marketing activities to unlock app functionality.

3.1.5 Cryptocurrencies:

- (i) Wallets: Apps may facilitate virtual currency storage, provided they are offered by developers enrolled as an organization.
- (ii) Mining: Apps may not mine for cryptocurrencies unless the processing is performed off device (e.g. cloud-based mining).
- (iii) Exchanges: Apps may facilitate transactions or transmissions of cryptocurrency on an approved exchange, provided they are offered by the exchange itself.
- (iv) Initial Coin Offerings: Apps facilitating Initial Coin Offerings (“ICOs”),

cryptocurrency futures trading, and other crypto-securities or quasi-securities trading must come from established banks, securities firms, futures commission merchants (“FCM”), or other approved financial institutions and must comply with all applicable law.

- (v) Cryptocurrency apps may not offer currency for completing tasks, such as downloading other apps, encouraging other users to download, posting to social networks, etc.

3.1.6 Apple Pay: Apps using Apple Pay must provide all material purchase information to the user prior to sale of any good or service and must use Apple Pay branding and user interface elements correctly, as described in the Apple Pay Identity Guidelines and Human Interface Guidelines. Apps using Apple Pay to offer recurring payments must, at a minimum, disclose the following information:

- The length of the renewal term and the fact that it will continue until canceled
- What will be provided during each period

- The actual charges that will be billed to the customer
- How to cancel

3.1.7 Advertising: Display advertising should be limited to your main app executable, and should not be included in extensions, App Clips, widgets, notifications, keyboards, watchOS apps, etc. Ads displayed in an app must be appropriate for the app's age rating, allow the user to see all information used to target them for that ad (without requiring the user to leave the app), and may not engage in targeted or behavioral advertising based on sensitive user data such as health/medical data (e.g. from the HealthKit APIs), school and classroom data (e.g. from ClassKit), or from kids (e.g. from apps in the Kids Category), etc. Interstitial ads or ads that interrupt or block the user experience must clearly indicate that they are an ad, must not manipulate or trick users into tapping into them, and must provide easily accessible and visible close/skip buttons large enough for people to easily dismiss the ad.

3.2 Other Business Model Issues

The lists below are not exhaustive, and your submission may trigger a change or update to our policies, but here are some additional dos and don'ts to keep in mind:

3.2.1 Acceptable

(i) Displaying your own apps for purchase or promotion within your app, provided the app is not merely a catalog of your apps.

(ii) Displaying or recommending a collection of third-party apps that are designed for a specific approved need (e.g. health management, aviation, accessibility). Your app should provide robust editorial content so that it doesn't seem like a mere storefront.

(iii) Disabling access to specific approved rental content (e.g. films, television programs, music, books) after the rental period has expired; all other items and services may not expire.

(iv) Wallet passes can be used to make or receive payments, transmit offers, or offer identification (such as movie tickets, coupons, and VIP credentials). Other uses may

result in the rejection of the app and the revocation of Wallet credentials.

(v) Insurance apps must be free, in legal-compliance in the regions distributed, and cannot use in-app purchase.

(vi) Approved nonprofits may fundraise directly within their own apps or third-party apps, provided those fundraising campaigns adhere to all App Review Guidelines and offer Apple Pay support. These apps must disclose how the funds will be used, abide by all required local and federal laws, and ensure appropriate tax receipts are available to donors. Additional information shall be provided to App Review upon request. Nonprofit platforms that connect donors to other nonprofits must ensure that every nonprofit listed in the app has also gone through the nonprofit approval process. Learn more about becoming an approved nonprofit.

(vii) Apps may enable individual users to give a monetary gift to another individual without using in-app purchase, provided that (a) the gift is a completely

optional choice by the giver, and
(b) 100% of the funds go to the receiver of the gift. However, a gift that is connected to or associated at any point in time with receiving digital content or services must use in-app purchase.

(viii) Apps used for financial trading, investing, or money management should come from the financial institution performing such services or must use a public API offered by the institution in compliance with its Terms & Conditions.

3.2.2 Unacceptable

(i) Creating an interface for displaying third-party apps, extensions, or plug-ins similar to the App Store or as a general-interest collection.

(ii) Monetizing built-in capabilities provided by the hardware or operating system, such as Push Notifications, the camera, or the gyroscope; or Apple services, such as Apple Music access or iCloud storage.

(iii) Artificially increasing the number of impressions or click-throughs of ads, as well as apps

that are designed predominantly for the display of ads.

(iv) Unless you are an approved nonprofit or otherwise permitted under Section 3.2.1 (vi) above, collecting funds within the app for charities and fundraisers. Apps that seek to raise money for such causes must be free on the App Store and may only collect funds outside of the app, such as via Safari or SMS.

(v) Arbitrarily restricting who may use the app, such as by location or carrier.

(vi) Apps should allow a user to get what they've paid for without performing additional tasks, such as posting on social media, uploading contacts, checking in to the app a certain number of times, etc. Apps should not require users to rate the app, review the app, watch videos, download other apps, tap on advertisements, enable tracking, or take other similar actions in order to access functionality, content, use the app, or receive monetary or other compensation, including but not limited to gift cards and codes.

(vii) Artificially manipulating a user's visibility, status, or rank

on other services unless permitted by that service's Terms and Conditions.

(viii) Apps that facilitate binary options trading are not permitted on the App Store. Consider a web app instead. Apps that facilitate trading in contracts for difference ("CFDs") or other derivatives (e.g. FOREX) must be properly licensed in all jurisdictions where the service is available.

(ix) Apps must not force users to rate the app, review the app, download other apps, or perform other similar actions in order to access functionality, content, or use of the app.

(x) Apps offering personal loans must clearly and conspicuously disclose all loan terms, including but not limited to equivalent maximum Annual Percentage Rate (APR) and payment due date. Apps may not charge a maximum APR higher than 36%, including costs and fees, and may not require repayment in full in 60 days or less.

4. Design

Apple customers place a high value on products that are simple, refined,

innovative, and easy to use, and that's what we want to see on the App Store. Coming up with a great design is up to you, but the following are minimum standards for approval to the App Store. And remember that even after your app has been approved, you should update your app to ensure it remains functional and engaging to new and existing customers. Apps that stop working or offer a degraded experience may be removed from the App Store at any time.

4.1 Copycats

Come up with your own ideas. We know you have them, so make yours come to life. Don't simply copy the latest popular app on the App Store, or make some minor changes to another app's name or UI and pass it off as your own. In addition to risking an intellectual property infringement claim, it makes the App Store harder to navigate and just isn't fair to your fellow developers.

4.2 Minimum Functionality

Your app should include features, content, and UI that elevate it beyond a repackaged website. If your app is not particularly useful, unique, or "app-like," it doesn't belong on the App Store. If your

App doesn't provide some sort of lasting entertainment value, it may not be accepted. Apps that are simply a song or movie should be submitted to the iTunes Store. Apps that are simply a book or game guide should be submitted to the Apple Books Store.

4.2.1 Apps using ARKit should provide rich and integrated augmented reality experiences; merely dropping a model into an AR view or replaying animation is not enough.

4.2.2 Other than catalogs, apps shouldn't primarily be marketing materials, advertisements, web clippings, content aggregators, or a collection of links.

4.2.3

- (i) Your app should work on its own without requiring installation of another app to function.
- (ii) Make sure you include sufficient content in the binary for the app to function at launch.
- (iii) If your app needs to download additional resources, disclose the size of the download and prompt users before doing so.

4.2.4 Apple Watch apps that appear to be a watch face are confusing, because people will expect them to work with device features such as swipes, notifications, and third-party complications. Creative ways of expressing time as an app interface is great (say, a tide clock for surfers), but if your app comes too close to resembling a watch face, we will reject it.

4.2.5 Apps that are primarily iCloud and iCloud Drive file managers need to include additional app functionality to be approved.

4.2.6 Apps created from a commercialized template or app generation service will be rejected unless they are submitted directly by the provider of the app's content. These services should not submit apps on behalf of their clients and should offer tools that let their clients create customized, innovative apps that provide unique customer experiences. Another acceptable option for template providers is to create a single binary to host all client content in an aggregated or "picker" model, for example as a restaurant finder app with

separate customized entries or pages for each client restaurant, or as an event app with separate entries for each client event.

4.2.7 Remote Desktop Clients:

If your remote desktop app acts as a mirror of specific software or services rather than a generic mirror of the host device, it must comply with the following:

- (a) The app must only connect to a user-owned host device that is a personal computer or dedicated game console owned by the user, and both the host device and client must be connected on a local and LAN-based network.
- (b) Any software or services appearing in the client are fully executed on the host device, rendered on the screen of the host device, and may not use APIs or platform features beyond what is required to stream the Remote Desktop.
- (c) All account creation and management must be initiated from the host device.
- (d) The UI appearing on the client does not resemble an iOS or App Store view, does not provide a store-like interface, or

include the ability to browse, select, or purchase software not already owned or licensed by the user. For the sake of clarity, transactions taking place within mirrored software do not need to use in-app purchase, provided the transactions are processed on the host device.

- (e) Thin clients for cloud-based apps are not appropriate for the App Store.

4.3 Spam

Don't create multiple Bundle IDs of the same app. If your app has different versions for specific locations, sports teams, universities, etc., consider submitting a single app and provide the variations using in-app purchase. Also avoid piling on to a category that is already saturated; the App Store has enough fart, burp, flashlight, fortune telling, dating, and Kama Sutra apps, etc. already. We will reject these apps unless they provide a unique, high-quality experience. Spamming the store may lead to your removal from the Developer Program.

4.4 Extensions

Apps hosting or containing extensions must comply with the App Extension Programming Guide

or the Safari App Extensions Guide and should include some functionality, such as help screens and settings interfaces where possible. You should clearly and accurately disclose what extensions are made available in the app's marketing text, and the extensions may not include marketing, advertising, or in-app purchases.

4.4.1 Keyboard extensions have some additional rules.

They must:

- Provide keyboard input functionality (e.g. typed characters);
- Follow Sticker guidelines if the keyboard includes images or emoji;
- Provide a method for progressing to the next keyboard;
- Remain functional without full network access and without requiring full access;
- Collect user activity only to enhance the functionality of the user's keyboard extension on the iOS device.

They must not:

- Launch other apps besides Settings; or

- Repurpose keyboard buttons for other behaviors (e.g. holding down the “return” key to launch the camera).

4.4.2 Safari extensions must run on the current version of Safari on macOS. They may not interfere with System or Safari UI elements and must never include malicious or misleading content or code. Violating this rule will lead to removal from the Developer Program. Safari extensions should not claim access to more websites than strictly necessary to function.

4.4.3 Stickers

Stickers are a great way to make Messages more dynamic and fun, letting people express themselves in clever, funny, meaningful ways. Whether your app contains a sticker extension or you’re creating free-standing sticker packs, its content shouldn’t offend users, create a negative experience, or violate the law.

(i) In general, if it wouldn’t be suitable for the App Store, it doesn’t belong in a sticker.

(ii) Consider regional sensitivities, and do not make your sticker pack available in a country

where it could be poorly received or violate local law.

(iii) If we don't understand what your stickers mean, include a clear explanation in your review notes to avoid any delays in the review process.

(iv) Ensure your stickers have relevance beyond your friends and family; they should not be specific to personal events, groups, or relationships.

(v) You must have all the necessary copyright, trademark, publicity rights, and permissions for the content in your stickers, and shouldn't submit anything unless you're authorized to do so. Keep in mind that you must be able to provide verifiable documentation upon request. Apps with sticker content you don't have rights to use will be removed from the App Store and repeat offenders will be removed from the Developer Program. If you believe your content has been infringed by another provider, submit a claim [here](#).

4.5 Apple Sites and Services

4.5.1 Apps may use approved Apple RSS feeds such as the iTunes Store RSS feed, but may not scrape any information from

Apple sites (e.g. apple.com, the iTunes Store, App Store, App Store Connect, developer portal, etc.) or create rankings using this information.

4.5.2 Apple Music

(i) MusicKit on iOS lets users play Apple Music and their local music library natively from your apps and games. When a user provides permission to their Apple Music account, your app can create playlists, add songs to their library, and play any of the millions of songs in the Apple Music catalog. Users must initiate the playback of an Apple Music stream and be able to navigate using standard media controls such as “play,” “pause,” and “skip.” Moreover, your app may not require payment or indirectly monetize access to the Apple Music service (e.g. in-app purchase, advertising, requesting user info, etc.). Do not download, upload, or enable sharing of music files sourced from the MusicKit APIs, except as explicitly permitted in MusicKit documentation.

(ii) Using the MusicKit APIs is not a replacement for securing the licenses you might need for a

deeper or more complex music integration. For example, if you want your app to play a specific song at a particular moment, or to create audio or video files that can be shared to social media, you'll need to contact rights-holders directly to get their permission (e.g. synchronization or adaptation rights) and assets. Cover art and other metadata may only be used in connection with music playback or playlists (including App Store screenshots displaying your app's functionality), and should not be used in any marketing or advertising without getting specific authorization from rights-holders. Make sure to follow the Apple Music Identity Guidelines when integrating Apple Music services in your app.

(iii) Apps that access Apple Music user data, such as playlists and favorites, must clearly disclose this access in the purpose string. Any data collected may not be shared with third parties for any purpose other than supporting or improving the app experience. This data may not be used to

identify users or devices, or to target advertising.

4.5.3 Do not use Apple Services to spam, phish, or send unsolicited messages to customers, including Game Center, Push Notifications, etc. Do not attempt to reverse lookup, trace, relate, associate, mine, harvest, or otherwise exploit Player IDs, aliases, or other information obtained through Game Center, or you will be removed from the Developer Program.

4.5.4 Push Notifications must not be required for the app to function, and should not be used to send sensitive personal or confidential information. Push Notifications should not be used for promotions or direct marketing purposes unless customers have explicitly opted in to receive them via consent language displayed in your app's UI, and you provide a method in your app for a user to opt out from receiving such messages. Abuse of these services may result in revocation of your privileges.

4.5.5 Only use Game Center Player IDs in a manner approved by the Game Center terms and do

not display them in the app or to any third party.

4.5.6 Apps may use Unicode characters that render as Apple emoji in their app and app metadata. Apple emoji may not be used on other platforms or embedded directly in your app binary.

4.6 Alternate App Icons

Apps may display customized icons, for example, to reflect a sports team preference, provided that each change is initiated by the user and the app includes settings to revert to the original icon. All icon variants must relate to the content of the app and changes should be consistent across all system assets, so that the icons displayed in Settings, Notifications, etc. match the new springboard icon. This feature may not be used for dynamic, automatic, or serial changes, such as to reflect up-to-date weather information, calendar notifications, etc.

4.7 HTML5 Games, Bots, etc.

Apps may contain or run code that is not embedded in the binary (e.g. HTML5-based games, bots, etc.), as long as code distribution isn't the main purpose of the app, the code is not offered in a store or store-like

interface, and provided that the software (1) is free or purchased using in-app purchase; (2) only uses capabilities available in a standard WebKit view (e.g. it must open and run natively in Safari without modifications or additional software); your app must use WebKit and JavaScript Core to run third-party software and should not attempt to extend or expose native platform APIs to third-party software; (3) is offered by developers that have joined the Apple Developer Program and signed the Apple Developer Program License Agreement; (4) does not provide access to real money gaming, lotteries, or charitable donations; (5) adheres to the terms of these App Review Guidelines (e.g. does not include objectionable content); and (6) does not offer digital goods or services for sale. Upon request, you must provide an index of software and metadata available in your app. It must include Apple Developer Program Team IDs for the providers of the software along with a URL which App Review can use to confirm that the software complies with the requirements above.

4.8 Sign in with Apple

Apps that use a third-party or social login service (such as Facebook Login, Google Sign-In, Sign in with Twitter, Sign In with LinkedIn, Login with Amazon, or WeChat Login) to set up or authenticate the user's primary account with the app must also offer Sign in with Apple as an equivalent option. A user's primary account is the account they establish with your app for the purposes of identifying themselves, signing in, and accessing your features and associated services.

Sign in with Apple is not required if:

- Your app exclusively uses your company's own account setup and sign-in systems.
- Your app is an education, enterprise, or business app that requires the user to sign in with an existing education or enterprise account.
- Your app uses a government or industry-backed citizen identification system or electronic ID to authenticate users.
- Your app is a client for a specific third-party service and users are

required to sign in to their mail, social media, or other third-party account directly to access their content.

4.9 Streaming games

Streaming games are permitted so long as they adhere to all guidelines — for example, each game update must be submitted for review, developers must provide appropriate metadata for search, games must use in-app purchase to unlock features or functionality, etc. Of course, there is always the open Internet and web browser apps to reach all users outside of the App Store.

4.9.1 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 ratings and review, can be managed with ScreenTime and other parental control apps, appears on the user’s device, etc.

4.9.2 Streaming game services may offer a catalog app on the App Store to help users sign up for the service and find the games on the App Store, provided that the app adheres to all guidelines, including offering users the option to pay for a subscription with in-

app purchase and use Sign in with Apple. All the games included in the catalog app must link to an individual App Store product page.

5. Legal

Apps must comply with all legal requirements in any location where you make them available (if you're not sure, check with a lawyer). We know this stuff is complicated, but it is your responsibility to understand and make sure your app conforms with all local laws, not just the guidelines below. And of course, apps that solicit, promote, or encourage criminal or clearly reckless behavior will be rejected. In extreme cases, such as apps that are found to facilitate human trafficking and/or the exploitation of children, appropriate authorities will be notified.

5.1 Privacy

Protecting user privacy is paramount in the Apple ecosystem, and you should use care when handling personal data to ensure you've complied with privacy best practices, applicable laws and the terms of the Apple Developer Program License Agreement, not to

mention customer expectations.
More particularly:

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, WeChat, Weibo, Twitter, etc.), you must

provide access without a login or 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 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, 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.

(iv) Do not use information from Contacts, Photos, or other APIs that access user data to build a contact database for your own use or for sale/distribution to third parties, and don’t collect information about which other apps are installed on a user’s device for the purposes of analytics or advertising/marketing.

(v) Do not contact people using information collected via a user’s Contacts or Photos, except at the explicit initiative of that user on

an individualized basis; do not include a Select All option or default the selection of all contacts. You must provide the user with a clear description of how the message will appear to the recipient before sending it (e.g. What will the message say? Who will appear to be the sender?).

(vi) Data gathered from the HomeKit API, HealthKit, Clinical Health Records API, MovementDisorder APIs, ClassKit or from depth and/or facial mapping tools (e.g. ARKit, Camera APIs, or Photo APIs) may not be used for marketing, advertising or use-based data mining, including by third parties. Learn more about best practices for implementing CallKit, HealthKit, ClassKit, and ARKit.

(vii) Apps using Apple Pay may only share user data acquired via Apple Pay with third parties to facilitate or improve delivery of goods and services.

5.1.3 Health and Health Research

Health, fitness, and medical data are especially sensitive and apps in this space have some additional

rules to make sure customer privacy is protected:

(i) Apps may not use or disclose to third parties data gathered in the health, fitness, and medical research context—including from the Clinical Health Records API, HealthKit API, Motion and Fitness, MovementDisorderAPIs, or health-related human subject research—for advertising, marketing, or other use-based data mining purposes other than improving health management, or for the purpose of health research, and then only with permission. Apps may, however, use a user's health or fitness data to provide a benefit directly to that user (such as a reduced insurance premium), provided that the app is submitted by the entity providing the benefit, and the data is not be shared with a third party. You must disclose the specific health data that you are collecting from the device.

(ii) Apps must not write false or inaccurate data into HealthKit or any other medical research or health management apps, and may not store personal health information in iCloud.

(iii) Apps conducting health-related human subject research must obtain consent from participants or, in the case of minors, their parent or guardian. Such consent must include the (a) nature, purpose, and duration of the research; (b) procedures, risks, and benefits to the participant; (c) information about confidentiality and handling of data (including any sharing with third parties); (d) a point of contact for participant questions; and (e) the withdrawal process.

(iv) Apps conducting health-related human subject research must secure approval from an independent ethics review board. Proof of such approval must be provided upon request.

5.1.4 Kids

For many reasons, it is critical to use care when dealing with personal data from kids, and we encourage you to carefully review all the requirements for complying with laws like the Children's Online Privacy Protection Act ("COPPA"), the European Union's General Data Protection Regulation ("GDPR"), and any

other applicable regulations or laws.

Apps may ask for birthdate and parental contact information only for the purpose of complying with these statutes, but must include some useful functionality or entertainment value regardless of a person's age.

Apps intended primarily for kids should not include third-party analytics or third-party advertising. This provides a safer experience for kids. In limited cases, third-party analytics and third-party advertising may be permitted provided that the services adhere to the same terms set forth in Guideline 1.3.

Moreover, apps in the Kids Category or those that collect, transmit, or have the capability to share personal information (e.g. name, address, email, location, photos, videos, drawings, the ability to chat, other personal data, or persistent identifiers used in combination with any of the above) from a minor must include a privacy policy and must comply with all applicable children's privacy statutes. For the sake of clarity, the parental gate requirement for the Kid's

Category is generally not the same as securing parental consent to collect personal data under these privacy statutes.

As a reminder, Guideline 2.3.8 requires that use of terms like “For Kids” and “For Children” in app metadata is reserved for the Kids Category. Apps not in the Kids Category cannot include any terms in app name, subtitle, icon, screenshots or description that imply the main audience for the app is children.

5.1.5 Location Services

Use Location services in your app only when it is directly relevant to the features and services provided by the app. Location-based APIs shouldn’t be used to provide emergency services or autonomous control over vehicles, aircraft, and other devices, except for small devices such as lightweight drones and toys, or remote control car alarm systems, etc. Ensure that you notify and obtain consent before collecting, transmitting, or using location data. If your app uses location services, be sure to explain the purpose in your app; refer to the Human Interface Guidelines for best practices on doing so.

5.2 Intellectual Property

Make sure your app only includes content that you created or that you have a license to use. Your app may be removed if you've stepped over the line and used content without permission. Of course, this also means someone else's app may be removed if they've "borrowed" from your work. If you believe your intellectual property has been infringed by another developer on the App Store, submit a claim via our web form. Laws differ in different countries, but at the very least, make sure to avoid the following common errors:

5.2.1 Generally: Don't use protected third-party material such as trademarks, copyrighted works, or patented ideas in your app without permission, and don't include misleading, false, or copycat representations, names, or metadata in your app bundle or developer name. Apps should be submitted by the person or legal entity that owns or has licensed the intellectual property and other relevant rights.

5.2.2 Third-Party Sites/Services: If your app uses, accesses,

monetizes access to, or displays content from a third-party service, ensure that you are specifically permitted to do so under the service's terms of use. Authorization must be provided upon request.

5.2.3 Audio/Video Downloading: Apps should not facilitate illegal file sharing or include the ability to save, convert, or download media from third-party sources (e.g. Apple Music, YouTube, SoundCloud, Vimeo, etc.) without explicit authorization from those sources. Streaming of audio/video content may also violate Terms of Use, so be sure to check before your app accesses those services. Documentation must be provided upon request.

5.2.4 Apple Endorsements: Don't suggest or imply that Apple is a source or supplier of the App, or that Apple endorses any particular representation regarding quality or functionality. If your app is selected as an "Editor's Choice," Apple will apply the badge automatically.

5.2.5 Apple Products: Don't create an app that appears confusingly similar to an existing

Apple product, interface (e.g. Finder), app (such as the App Store, iTunes Store, or Messages) or advertising theme. Apps and extensions, including third-party keyboards and Sticker packs, may not include Apple emoji. iTunes music previews may not be used for their entertainment value (e.g. as the background music to a photo collage or the soundtrack to a game) or in any other unauthorized manner. If your app displays Activity rings, they should not visualize Move, Exercise, or Stand data in a way that resembles the Activity control. The Human Interface Guidelines have more information on how to use Activity rings.

5.3 Gaming, Gambling, and Lotteries

Gambling, gaming, and lotteries can be tricky to manage and tend to be one of the most regulated offerings on the App Store. Only include this functionality if you've fully vetted your legal obligations everywhere you make your app available and are prepared for extra time during the review process. Some things to keep in mind:

5.3.1 Sweepstakes and contests must be sponsored by the developer of the app.

5.3.2 Official rules for sweepstakes, contests, and raffles must be presented in the app and make clear that Apple is not a sponsor or involved in the activity in any manner.

5.3.3 Apps may not use in-app purchase to purchase credit or currency for use in conjunction with real money gaming of any kind, and may not enable people to purchase lottery or raffle tickets or initiate fund transfers in the app.

5.3.4 Apps that offer real money gaming (e.g. sports betting, poker, casino games, horse racing) or lotteries must have necessary licensing and permissions in the locations where the App is used, must be geo-restricted to those locations, and must be free on the App Store. Illegal gambling aids, including card counters, are not permitted on the App Store. Lottery apps must have consideration, chance, and a prize.

5.4 VPN Apps

Apps offering VPN services must utilize the NEVPNManager API and may only be offered by developers enrolled as an organization. You must make a clear declaration of what user data will be collected and how it will be used on an app screen prior to any user action to purchase or otherwise use the service. Apps offering VPN services may not sell, use, or disclose to third parties any data for any purpose, and must commit to this in their privacy policy. VPN apps must not violate local laws, and if you choose to make your VPN app available in a territory that requires a VPN license, you must provide your license information in the App Review Notes field. Parental control, content blocking, and security apps, among others, from approved providers may also use the NEVPNManager API. Apps that do not comply with this guideline will be removed from the App Store and you may be removed from the Apple Developer Program.

5.5 Mobile Device Management

Mobile Device Management Apps that offer Mobile Device

Management (MDM) services must request this capability from Apple. Such apps may only be offered by commercial enterprises (such as business organizations, educational institutions, or government agencies), and in limited cases, companies using MDM for parental control services or device security. You must make a clear declaration of what user data will be collected and how it will be used on an app screen prior to any user action to purchase or otherwise use the service. MDM apps must not violate any applicable laws. Apps offering MDM services may not sell, use, or disclose to third parties any data for any purpose, and must commit to this in their privacy policy. In limited cases, third-party analytics may be permitted provided that the services only collect or transmit data about the performance of the developer's MDM app, and not any data about the user, the user's device, or other apps used on that device. Apps offering configuration profiles must also adhere to these requirements. Apps that do not comply with this guideline will be removed from the App Store and

you may be removed from the Apple Developer Program.

5.6 Developer Code of Conduct

Please treat everyone with respect, whether in your responses to App Store reviews, customer support requests, or when communicating with Apple, including your responses in Resolution Center. Do not engage in harassment of any kind, discriminatory practices, intimidation, bullying, and don't encourage others to engage in any of the above.

Customer trust is the cornerstone of the App Store's success. Apps should never prey on users or attempt to rip-off customers, trick them into making unwanted purchases, force them to share unnecessary data, raise prices in a tricky manner, charge for features or content that are not delivered, or engage in any other manipulative practices within or outside of the app.

5.6.1 App Store Reviews

App Store customer reviews can be an integral part of the app experience, so you should treat customers with respect when responding to their comments. Keep your responses targeted to

the user's comments and do not include personal information, spam, or marketing in your response.

Use the provided API to prompt users to review your app; this functionality allows customers to provide an App Store rating and review without the inconvenience of leaving your app, and we will disallow custom review prompts.

After You Submit

Once you've submitted your app and metadata in App Store Connect and you're in the review process, here are some things to keep in mind:

- **Timing:** App Review will examine your app as soon as we can. However, if your app is complex or presents new issues, it may require greater scrutiny and consideration. And remember that if your app is repeatedly rejected for the same guideline violation or you've attempted to manipulate the App Review process, review of your app will take longer to complete. Learn more about App Review.
- **Status Updates:** The current status of your app will be reflected

in App Store Connect, so you can keep an eye on things from there.

- **Expedite Requests:** If you have a critical timing issue, you can request an expedited review. Please respect your fellow developers by seeking expedited review only when you truly need it. If we find you're abusing this system, we may reject your requests going forward.
- **Release Date:** If your release date is set for the future, the app will not appear on the App Store until that date, even if it is approved by App Review. And remember that it can take up to 24-hours for your app to appear on all selected storefronts.
- **Rejections:** Our goal is to apply these guidelines fairly and consistently, but nobody's perfect. If your app has been rejected and you have questions or would like to provide additional information, please use the Resolution Center to communicate directly with the App Review team. This may help get your app on the store, and it can help us improve the App Review process or identify a need for clarity in our policies. If you still disagree with the outcome, or would like to suggest a change to

the guideline itself, please submit an appeal.

- **Bug Fix Submissions:** For apps that are already on the App Store, bug fixes will no longer be delayed over guideline violations except for those related to legal issues. If your app has been rejected, and qualifies for this process, please use the Resolution Center to communicate directly with the App Review team indicating that you would like to take advantage of this process and plan to address the issue in your next submission.

We're excited to see what you come up with next!

Last Updated: 11 Sep 2020

* * *

JA-83

[559 F. Supp. 3d 898]

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

EPIC GAMES, INC., Plaintiff,

v.

APPLE INC., Defendant.

Apple Inc., Counterclaimant,

v.

Epic Games, Inc., Counter-Defendant.

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

Signed 09/10/2021

RULE 52 ORDER AFTER TRIAL ON THE MERITS

YVONNE GONZALEZ ROGERS, United States
District Court Judge

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.

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

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.

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.

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).

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 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") system³ 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.

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.

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 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

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

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

market, which also owns about 1 to 2 percent of Epic Games.⁶

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.

⁶ *Id.* 178:24–179:6, 179:21–180:3.

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.

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 charges a royalty on products that use any version of the *Unreal Engine* (typically 5% of gross revenue).¹⁸ In the past, developers were

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).

¹⁸ DX-4022.007–.008 (§ 5).

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 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

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.

²⁴ Trial Tr. (Grant) 664:21–665:17.

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

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.”).

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.

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 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

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.

³² DX-5536.004.

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

³⁴ DX-5536.001–002.

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: “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

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.

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.

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

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

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 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.

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 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

⁴⁷ Trial Tr. (Sweeney) 107:12–18.

⁴⁸ *Id.* 158:17–19.

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.

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

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

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.

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.

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:

- 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 Kaskadee hosted a virtual concert in March 2021.⁶⁴

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

⁵⁸ *Id.* 98:12–99:3.

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

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 V-Bucks 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 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

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.

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

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

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

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.

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

⁷⁸ DX-3691.009.

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 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

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.*

⁸³ *Id.*

⁸⁴ *Id.*

⁸⁵ *Id.*

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 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

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.

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

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, 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

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

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.

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 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

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

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

⁹⁵ *Id.*

⁹⁶ *Id.* ¶ 69 & Fig. 14.

⁹⁷ DX-4763.

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 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

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.

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 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

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.

and appears separate and apart from the Epic Games Store.¹⁰⁷

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

¹⁰⁷ *Id.* 1239:8–13.

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

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-app purchases.¹¹² Because of this open policy, several app developers

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 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.

¹¹² Trial Tr. (Sweeney) 125:23–25.

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 active users.¹¹⁵ It supports more than 100 third-party app developers and publishes over 400 of

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.

¹¹⁵ Trial Tr. (Allison) 1220:21–25.

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 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

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.

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.

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

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

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.

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 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 officer Tim Cook urging

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.

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.

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

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

¹²⁷ PX-2374.001.

¹²⁸ PX-2421.001.

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

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 programmed and created experiences. In Mr. Sweeney’s own words, a metaverse is “a realistic 3D world in which participants have both social experiences, 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*,

(approving the strategic decisions for Project Liberty); DX-4072 (developing a project “War Room”); DX-4561 (outlining detailed timelines).

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.

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 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

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.

¹³³ *Id.* 112:13–17.

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

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 apparatuses¹³⁶ which Epic Games described as “an attempt to provide developer choices for payment solutions and 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

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.

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.

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 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

¹⁴¹ Trial Tr. (Grant) 734:10–13.

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.

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 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

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

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.

activation of the plan such as creating an affiliated advocacy group, and a second 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

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.

players.” “They may also sue us to make an example,” he added.¹⁵⁵

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

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”).

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).

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

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.

iOS App Store itself has, including the ability 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 principle of the App Store is to provide a safe, secure and reliable experience for users and a great opportunity for all developers

¹⁶³ DX-4477.

¹⁶⁴ *Id.*

¹⁶⁵ Trial Tr. (Sweeney) 337:13–338.2.

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 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

¹⁶⁶ DX-4140.

¹⁶⁷ DX-4480.001.

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 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

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

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

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

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.

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 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

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.

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.

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

¹⁷⁸ Trial Tr. (Schiller) 2715:17–25.

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

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 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 \$99.00¹⁸¹ and provide some basic information such as a valid debit/credit card; a valid 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.

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.

¹⁸² Ex. Expert 6 (Hitt) ¶ 169.

¹⁸³ Trial Tr. (Schiller) 2759:9–17.

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 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;

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

- Create apps for Apple products which could only be distributed through the App Store (Section 3.2)¹⁸⁷;
- Submit proposed apps for review to ensure they were properly documented and did not contravene the program requirements (Section 3.3.2¹⁸⁸ and 3.3.3¹⁸⁹);

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.*

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

- 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.

through distribution mechanisms other than the App Store, Custom App Distribution or TestFlight.”

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

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 Purchase Methods states: “The following apps may use purchase methods other than

resubmit the Application to Apple. Similarly all bug fixes, updates, upgrades, modifications, enhancements, supplements to, revisions, new releases and new versions of Your Application must be submitted to Apple for review in order for them to be considered for distribution via the App Store or Custom App Distribution, except as otherwise permitted by Apple. (Emphasis supplied.)

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

¹⁹³ PX-2790 (emphasis supplied).

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

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.

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.

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,

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.

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

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.

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.

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 Officer (“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 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,

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

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 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

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

²⁰⁴ PX-608.028.

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

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

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

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

²⁰⁷ *Id.* 2810:16–2811:5.

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 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*

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

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.

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 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

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.

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.

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 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

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.

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.”).

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 privacy, data collection and storage.²¹⁹ The data collection

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.

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 use SafariViewController to track users without their knowledge and consent.

and disclosure requirements are not insignificant. They require user consent, minimization, and affirmative permissions. These specifications place the customer's 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

(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.

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 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

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”).

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

²²³ Trial Tr. (Federighi) 3490:4–6.

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] 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

²²⁴ Trial Tr. (Simon) 369:23–373:3.

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

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 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.

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.

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).

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. 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

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.

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

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

²³² *Id.*

²³³ *Id.*

²³⁴ *Id.* ¶ 9.

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 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

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.

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 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,

²³⁸ DX-4399.008.

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

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

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.

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.

of the App Store billings for the quarter.²⁴¹ The trend has largely continued to the present.²⁴²

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]

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.

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.

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.

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.

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.*

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. 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

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.

eliminate them.²⁵⁰ In essence, Epic Games ignores these 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

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 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.

aftermarket are related but two separate markets. Two, there are restraints in the aftermarket which are not in the foremarket. Three, the 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 costs²⁵⁴ 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

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; *see* Trial Tr. (Schmalensee) 1930:3–14; Ex. Expert 6 (Hitt) ¶ 211.

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 then advised Tim Cook that “moving iMessage to Android will hurt us more than help

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.

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 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

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.

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 *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

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).

meaningful barrier to switching *in practice*. There is simply no independent data to show that switching costs create meaningful lock-in.²⁶³

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.

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

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 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.

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.

²⁶⁵ DX-3084A.022; Trial Tr. (Cook) 3867:12–3870:1, 3886:19–3887:5; DX-5573.

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 *unaware* 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 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

²⁶⁶ PX-0880.021, .027; PX-0417.001.

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

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

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 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.

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 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

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 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.

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

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

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.

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 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.

²⁷² Ex. Expert 1 (Evans) ¶¶ 48, 89.

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.

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. 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.

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.

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 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.

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

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.

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, 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

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.

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.

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

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.

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, 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.”

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).

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. 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's 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

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.

relevant 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 “Small but Significant and Non-transitory Increase in Price,” 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.

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.

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 he tested. As Professor Schmalensee explained, this is implausible: a price increase would reduce consumer demand for apps,

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.

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

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

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.

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.

c. Mobile Devices (Tablets
and the Switch)

As outlined above, Apple's product market is all digital gaming transactions. It therefore focuses on

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.

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 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

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.

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 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

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.

³⁰² DX-4170.008, .024.

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 than 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 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

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.

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.

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. 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

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.

³⁰⁷ Ex. Expert 6 (Hitt) ¶¶ 69–72, 82–87; DX-4792; Ex. Expert 13 (Cragg) ¶ 56.

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

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

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.

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.

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 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

³¹¹ Ex. Expert 6 (Hitt) ¶¶ 94–105.

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.

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

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

³¹³ Trial Tr. (Schmid) 3205:4–11; Ex. Expert 6 (Hitt) ¶ 126, Fig. 35; Ex. Expert 7 (Lafontaine) ¶ 26; DX–5552.

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.

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

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

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 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.

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.

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

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

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 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 differs 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

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.

³²⁰ Ex. Expert 6 (Hitt) ¶¶ 123, 124, Figs. 32–33.

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 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

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.

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.

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.

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.

³²³ Trial Tr. (Schmid) 3207:10–18.

³²⁴ Ex. Expert 1 (Evans) ¶ 220.

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. Plaintiffs' proposal begs the question of whether IAP is a product.

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,

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.

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 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 in-app 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

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.

examples 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.

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 evidence with respect to global digital video gaming. Given how the cases was

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.

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 that “games are incredibly dynamic,” that “[g]ames have a beginning, [and] an end,” and that “[t]here’s challenges in place.”³⁴⁰

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.

³⁴⁰ Trial Tr. (Kosmynka) 1015:23–25.

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 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

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.

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, transact, interact with friends and family, as well as play.³⁴⁶ According to Mr. Sweeney,

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. Kosmyinka. 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.

³⁴⁶ Trial Tr. (Sweeney) 99:17–22; Trial Tr. (Weissinger) 1295:10–11 (describing a metaverse as a “social place where

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 Epic Games markets *Fortnite* to the public as a video game,³⁵¹ and

people can experience events together and hang out together”); Trial Tr. (Kosmyinka) 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) 1246:7–1247:18; 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.

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 Court need not further define the

(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, 1190:9–1191:6. 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.

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 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,

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.

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

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

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.

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 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

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.

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 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

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.

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”).

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

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.

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.

³⁶⁷ Trial Tr. (Athey) 1843:7–19, 1844:10–14, 1851:1–23.

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 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

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.

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.

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

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

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.

³⁷⁵ See generally DX-3248.

demographics, “male boomer” aged gamers 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

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

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).

³⁷⁸ Trial Tr. (Allison) 1209:13–1210:1.

³⁷⁹ Trial Tr. (Sweeney) 126:1–7.

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 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

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 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.

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

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

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).

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.

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 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

³⁸⁶ See Trial Tr. (Wight) 535:20–536:12, 555:24–556:5, 557:10–15.

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.

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

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

³⁹⁰ See *id.* 539:22–25, 636:11–17.

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.

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 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

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.

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.

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 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

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.

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 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

⁴⁰⁰ See Trial Tr. (Wright) 551:24–13; Trial Tr. (Weissinger) 1350:18–1351:7; Trial Tr. (Evans) 1476:2–8. Apple contests this 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.

sticks, d-pads, and buttons located on the face and edges of the controller.⁴⁰³

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 Xbox Cloud Gaming, and Amazon's Luna. Cloud-based game streaming services provide the experience of playing a game on

⁴⁰³ Trial Tr. (Grant) 695:4–9; *see also* PX-2274.001.

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.

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 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

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.

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 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

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.

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 GeForce 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 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

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).

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.

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 web 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

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 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.

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.

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

⁴¹⁵ DX-3768 at 26:1–23; Trial Tr. (Sweeney) 243:10–244:9.

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 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

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; *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.

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 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.

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.

⁴²⁰ See generally Trial Tr. (Grant) 671:2–673:20.

⁴²¹ See generally *supra* Facts §§ II.B.1–2, II.D.3.

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 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

⁴²² DX-3867.

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.

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.

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

⁴²⁶ See Trial Tr. (Schiller) 2819:18–2820:2; DX-3582.003.

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 consumers 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

⁴²⁷ Ex. Expert 6 (Hitt) ¶ 117.

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

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

⁴²⁸ See *supra* Facts § II.D.; Trial Tr. (Schiller) 2867:1–20; Trial Tr. (Cook) 3865:23–3867:5.

⁴²⁹ See Ex. Expert 6 (Hitt) ¶¶ 137–138.

⁴³⁰ *Id.* ¶¶ 8, 117, 123–128.

⁴³¹ *Id.* ¶¶ 138, 140–141.

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 internal business records⁴³² 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 global video gaming market

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

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

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).

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.

in 2020.⁴³⁷ Using these figures and the same 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

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 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

Nonetheless, even assuming the market were limited to both mobile gaming *and* console 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.

(Nintendo Switch) that would have to be included in such a market.

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 storefront 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 impediments to

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.

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. Lafontaine 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

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, she did not consider developers' ability to directly

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.

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

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. (Kosmyinka) 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.

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 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

⁴⁵² Ex. Expert 8 (Schmalensee) ¶¶ 108–109.

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

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

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.

⁴⁵⁵ Ex. Expert 6 (Hitt) ¶¶ 169–176, 184.

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 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

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.

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.

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 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,

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.

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.

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

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.

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.

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 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

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).

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 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

⁴⁶⁶ Ex. Expert 4 (Athey) ¶¶ 16–19, 35–46.

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).

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 two-sided 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 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

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.

⁴⁷⁰ Ex. Expert 1 (Evans) ¶ 216; Ex. Expert 8 (Schmalensee) ¶ 127.

(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 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

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.

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 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.

⁴⁷³ PX-2386.

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.

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

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

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.

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.

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%, 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

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.

other 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

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 provided.⁴⁸⁶

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.

⁴⁸⁶ Trial Tr. (Simon) 377:3–10; Trial Tr. (Fisher) 911:4–11 (Apple received developer complaints that the rate is too high).

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 iOS game transactions exploded by 1,200% since 2008,⁴⁸⁸ with double that growth in

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%).

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

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 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

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.

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.

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 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

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.

⁴⁹⁴ Trial Tr. (Sweeney) 92:8–13.

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

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

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. Third-party 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).

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.”
- “[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).”

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.

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 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

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.

⁵⁰¹ Trial Tr. (Kosmyinka) 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.

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 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.

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.

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.

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 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

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.

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. (Kosmyinka) 1028:11–1030:4. The proffered evidence has no context so it cannot be evaluated.

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-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.

⁵⁰⁶ Trial Tr. (Athey) 1854:6–16.

⁵⁰⁷ PX-0099.005.

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).

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 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

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.

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.

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.

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

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.

⁵¹⁴ Ex. Expert 5 (Mickens) ¶ 49.

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 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”

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.

⁵¹⁶ “Sandboxing” may encompass other techniques, such as memory isolation and address space layout randomization. Trial

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 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,

Tr. (Federighi) 3376:4–3378:14; Ex. Expert 5 (Mickens) ¶¶ 24–37.

⁵¹⁷ Trial Tr. (Federighi) 3372:10–3375:25, 3383:16–3384:14.

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.

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

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

⁵²⁰ Trial Tr. (Federighi) 3371:3–3372:1, 3379:10–3380:13; Ex. Expert 11 (Rubin) ¶ 27.

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.

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 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

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

Removing app distribution restrictions could reduce this effectiveness. First, app stores often differ in the 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

rejected for proper and improper reasons. Trial evidence did not focus on this later issue.

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

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

and makes each store less knowledgeable. The Court finds both effects plausible, but lacks evidence on their comparative magnitude. Trial Tr. (Mickens) 2702:7–21; Ex. Expert 11 (Rubin) ¶ 93.

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”).

computer-generated private data (camera roll), it lacks the capacity to distinguish 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

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) 3166:6–15; Ex. Expert 11 (Rubin) ¶ 84. Apple also

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 not take place. Thus, app

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.

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 the dependability of a closed device and the ability to run third-party apps of a PC. As Mr. Jobs explained:

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.

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

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

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.

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

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

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.

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

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

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).

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

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

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 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.

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

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

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 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.

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.

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

⁵⁴⁶ *Id.* 3432:19–3434:4, 3394:4–22; *see, e.g.*, PX-0741.100, .500.

⁵⁴⁷ Trial Tr. (Federighi) 3510:5–15.

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 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 life, 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

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).

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

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 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.

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.

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

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

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.

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.

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 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 third-parties, such as Visa. Mr. Fischer testified that IAP provides features as

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.

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

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.

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, 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.

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 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

⁵⁵⁶ Ex. Expert 11 (Rubin) ¶¶ 126–128.

⁵⁵⁷ Apple FOF ¶ 669; Ex. Expert 8 (Schmalensee) ¶ 170.

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. 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

⁵⁵⁸ Ex. Expert 11 (Rubin) ¶ 128; Trial Tr. (Fischer) 958:12–959:2; Ex. Depo. 12 (Gray) 112:18–114:10.

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.

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

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

⁵⁶¹ PX-2790.010.

⁵⁶² See PX-0257; PX-2790.011; Trial Tr. (Lafontaine) 2055:12–2056:20; Trial Tr. (Schmalensee) 1911:1–12.

⁵⁶³ Apple FOF ¶ 572; Trial Tr. (Cook) 3863:6–3864:8.

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, 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

⁵⁶⁴ Ex. Depo. (Ong) 58:20–61:07, 152:04–23; *see also* DX-3922; *supra* Facts §§ I.C.3.b., V.A.1.

commissions from this highly lucrative gaming industry. While the evidence remains thin as to other developers, the conclusion can likely be extended.

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.

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”)*, — U.S. —, 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, 76 S.Ct. 994 (“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 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

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 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

those options were feasible.” *Id.* (internal quotation marks and citation omitted).

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, 76 S.Ct. 994.

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 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

⁵⁶⁶ Trial Tr. (Evans) 1454:11–16, 1457:10–1458:25, 1707:7–17; Trial Tr. (Schmalensee) 1955:3–23.

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.

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

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).

⁵⁶⁹ See, e.g., Ex. Expert 8 (Schmalensee) ¶¶ 55–56; Trial Tr. (Evans) 1707:2–17.

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, 82 S.Ct. 1502), 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.

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

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

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.

impacted by Apple’s alleged anticompetitive conduct.⁵⁷¹

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.

Third, and finally, subscription providers may present different security challenges than game stores. Mr. Kosmyinka 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. (Kosmyinka) 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.

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. 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

⁵⁷² Ex. Expert 6 (Hitt) ¶¶ 117, 120–24; DX-4178.006; PX-0059.007; Trial Tr. (Schmid) 3226:7–12.

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.

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.

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.

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.

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 disproportionately likely to be mobile gamers only. Multiplatform gaming, by contrast, is driven by teenage boys and young adults under 25.⁵⁷⁶

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

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”).

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

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

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.

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 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

⁵⁷⁹ DX-5523.008–.009; Trial Tr. (Wright) 547:4–9, 549:14–21, 638:6–19; Trial Tr. (Cook) 3993:2–6.

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.

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 Corp.*, 384 U.S. at 572, 86 S.Ct. 1698). "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, 112 S.Ct. 2072; *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, 112 S.Ct. 2072. 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, 112 S.Ct. 2072.

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, 112 S.Ct. 2072. 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, 112 S.Ct. 2072.

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, 112 S.Ct. 2072. “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

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.

packages including “lifetime warranties or long-term service agreements that are not available to locked-in customers.” *Id.* at 476–477, 112 S.Ct. 2072.

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, 112 S.Ct. 2072.

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.

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 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

⁵⁸² *See also Teradata Corp. v. SAP SE*, No. 18-CV-03670, 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”).

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 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

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.

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 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 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

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.

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.

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 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

⁵⁸⁶ Trial Tr. (Evans) 1508:15–1509:25.

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 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

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 to how its aftermarket theory as to Apple

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, 82

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 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.

S.Ct. 1502 (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).

“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 (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, 86 S.Ct. 1698.

The difference between the two is a matter of degree. “Monopoly power under § 2 requires, of course, something greater than market power under

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.”).

§ 1.” *Eastman Kodak*, 504 U.S. at 481, 112 S.Ct. 2072; *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’s*, 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

“[M]arket share is just the starting point for assessing market power.” *Hunt-Wesson Foods, Inc. v.*

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)).

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 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

⁵⁹² *See also Grinnell Corp.*, 384 U.S. at 571, 86 S.Ct. 1698 (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).

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 30% insufficient. *See, e.g., Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 512 F.2d 1264 (9th Cir. 1975). *But see also Jefferson*

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)).

Parish, 466 U.S. at 26 & n.43, 104 S.Ct. 1551 (30 percent market share insufficient); *Pilch v. French Hosp.*, No. CV 98-9470 CAS(CWX), 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

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 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

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).

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

other evidence of a defendant’s inability to control prices or exclude competitors.” (internal citation omitted)).

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 Pharms. Tech. Corp. v. Barr Lab’s 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, 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 facie* 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

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 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.

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).

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

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

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 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

prices are universal amongst each platform. *See supra* Facts §§ II.D.3–4.

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.

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 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.

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, 104 S.Ct. 2731) (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*”), — U.S. —, 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

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

As explained above, the Sherman Act distinguishes between unilateral and concerted activity. *Jeanery*, 849 F.2d 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, 104 S.Ct. 2731. 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, 104 S.Ct. 2731; *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, 104 S.Ct. 2731.

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, 104 S.Ct. 1464. 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, 104 S.Ct. 1464; *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

prices was “hybrid” because private parties still retained discretion. *Id.* at 894, 899. It then found that the posting 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.

coercive conduct and they involuntarily adhered to those restraints”).

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, 104 S.Ct. 1464.

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,”

⁶⁰¹ PX-2619; PX-2621.

they were not liable for concerted conduct under Section 1). *Id.*

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, 104 S.Ct. 1551. 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. Servs., 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);

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, 104 S.Ct. 2731 (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 “distinguish[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

Eastman Kodak, 504 U.S. at 463 n.8, 112 S.Ct. 2072 (conditioning sales is not a “unilateral refusal to deal”).

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 despite developer complaints and regulatory pressure. High commission rates certainly impact developers, and some evidence exists

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.

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 increase output.⁶⁰⁶ Further,

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.

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.

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, 127 S.Ct. 2705. In a two-sided transaction market, a court must consider procompetitive effects on both sides of the market. *Amex*, 138 S. Ct. at 2287.

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, 127 S.Ct. 2705. 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, 127 S.Ct. 2705. It is this interbrand competition that “the antitrust laws are designed primarily to protect.” *Id.* at 895, 127 S.Ct. 2705. 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 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

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. Comput. 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.”).

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.

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, 112 S.Ct. 2072. The Supreme Court declined to accept this argument and find in Kodak’s favor as a matter of law. *Id.* at 486, 112 S.Ct. 2072. 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.

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

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)).

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 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 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 the extent appellate courts perceive a practical distinction, clarity is welcomed.

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.

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

⁶¹¹ Trial Tr. (Federighi) 3502:22–3503:15. Professor Mickens even suggested the courts should micro-manage policy decisions.

reasonably supervise.” *NCAA*, 141 S. Ct. at 2163 (quoting *Verizon*, 540 U.S. at 415, 124 S.Ct. 872). Here, Epic Games has provided requests for its remedy which principally appear to eliminate app review.⁶¹² The requests also leave unclear whether Apple 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

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.

⁶¹³ Trial Tr. (Closing Arguments) 4156:20.

⁶¹⁴ Dkt. No. 276-1 at 4.

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 . . .”).

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

⁶¹⁵ Compl. ¶ 227.

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, IAP offers consumers a centralized purchasing system, whereby consumers 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

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

Indeed, while the Court finds no basis for the specific rate chosen by Apple (*i.e.*, the 30% rate) based on the 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.

(including the foregoing) would seemingly impose both increased monetary and time costs to both Apple and the developers.

⁶¹⁸ Epic Games COL ¶ 643.

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.

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, 86 S.Ct. 1698 (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, 104 S.Ct. 1551. “[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, 104 S.Ct. 1551.

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, 104 S.Ct. 1551. 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, 104 S.Ct. 1551; *Eastman Kodak*, 504 U.S. at 461–62, 112 S.Ct. 2072.

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, 104 S.Ct. 1551; *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, 104 S.Ct. 1551; *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, 104 S.Ct. 1551; *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, 104 S.Ct. 1551. “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, 126 S.Ct. 1281; *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. &*

⁶¹⁹ This conclusion is further bolstered by comparison to other platforms in the wider gaming market. *See Microsoft*

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 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

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.

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

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.

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.

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.

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 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.

⁶²² See Epic Games COL ¶ 426.

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 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 incipency" 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

⁶²³ *See* Dkt. No. 276 at 84–85; Epic Games COL ¶ 426.

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 DPLA⁶²⁴, is unreasonable 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

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 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)).

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 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, 91 Cal.Rptr.2d 534 (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

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

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 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.

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 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*

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) (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, 612–13 (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).

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' 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, 187 Cal.Rptr.3d 632, 348 P.3d 845 (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, 120 Cal.Rptr.3d 741, 246 P.3d 877. 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, 120 Cal.Rptr.3d 741, 246 P.3d 877. 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, 120 Cal.Rptr.3d 741, 246 P.3d 877 (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, 83 Cal.Rptr.2d 548, 973 P.2d 527; *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

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

Here, 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.

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 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, 83 Cal.Rptr.2d 548, 973 P.2d 527. These findings must be “tethered to some legislatively declared policy or proof of some actual or threatened impact on competition.” *Id.* at 186–87, 83 Cal.Rptr.2d 548, 973 P.2d 527; *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.*

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, 106 Cal.Rptr.3d 46 (internal quotation marks and citation omitted). The Court notes the Ninth Circuit has declined to apply the FTC test with respect to anti-consumer conduct “in the absence of a clear holding from

San Fernando Valley Bar Ass’n, 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 Cnty.*, 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, 83 Cal.Rptr.2d 548, 973 P.2d 527 (internal quotation marks and citation omitted). However, unfair practices under this test are not limited to violations of existing laws. *Id.* at 180, 83 Cal.Rptr.2d 548, 973 P.2d 527. Instead, California courts distinguish between conduct made lawful (or for

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.*

which relief is barred) by a statute and conduct not prohibited by any statute. *See id.* at 183, 83 Cal.Rptr.2d 548, 973 P.2d 527. 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, 83 Cal.Rptr.2d 548, 973 P.2d 527. 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, 83 Cal.Rptr.2d 548, 973 P.2d 527 (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

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.

reasons as stated 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, 83 Cal.Rptr.2d 548, 973 P.2d 527.

That does not, however, end the matter.⁶³² “A UCL action is equitable in nature.” *Korea Supply Co.*, 29 Cal. 4th at 1144, 131 Cal.Rptr.2d 29, 63 P.3d 937. 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, 261 Cal.Rptr.3d 713, 462 P.3d 461. 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

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.

failed, 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 decreased 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 mechanisms other than in-app purchase,"

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.

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, 97 S.Ct. 2691. 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.

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, 112 S.Ct. 2072.

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, 83 Cal.Rptr.2d 548, 973 P.2d 527; *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-

⁶³⁷ Ex. Expert 1 (Evans) ¶ 118.

⁶³⁸ See *Cel-Tech*, 20 Cal. 4th at 185, 83 Cal.Rptr.2d 548, 973 P.2d 527 (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.*, 201 Cal. App. 2d 765, 773, 20 Cal.Rptr. 516 (1962) (“[D]ecisions of the federal court [as to what constitutes “unfair” under the FTC Act] are more than ordinarily persuasive.”).

steering has the effect of preventing substitution among platforms for transactions. *Id.*

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, 106 Cal.Rptr.3d 46. 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 American Express’s rewards program, but then would steer

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”).

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

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 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

offered any justification for the 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.*, 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

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.html><https://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.

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 unclocking 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 statute was unconstitutional because it regulated out-of-state conduct in violation of the Commerce Clause. *Healy*, 491 U.S. at 326, 109 S.Ct. 2491. 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, 109 S.Ct. 2491. The Supreme

⁶⁴² See Apple COL ¶¶ 739–740.

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, 109 S.Ct. 2491.

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,

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.

services or functionality” in their apps⁶⁴⁴ 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

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

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.

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.

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. 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

⁶⁴⁹ See Epic Games’ Answer to Counterclaims at 17 (affirmative defenses 1 and 2).

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 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.").

⁶⁵⁰ *Id.* (citing DPLA §§ 3.2, 3.3.2, 3.3.3, 3.3.25).

“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, 41 Cal.Rptr.3d 877. It also has a public policy of protecting consumers of goods and services. See *Margolin v. 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%

⁶⁵¹ See Epic Games’ Answer to Counterclaims at 17 (affirmative defense 3).

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 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, 181 P.2d 897 ("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

⁶⁵² See Epic Games FOF ¶ 547.

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, 61 Cal.Rptr.3d 344, or “whether a contractual provision reallocates risks in an objectively unreasonable or unexpected manner,” *Lhotka*, 181 Cal. App. 4th at 821, 104 Cal.Rptr.3d 844. 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

⁶⁵³ *See* Epic Games’ Answer to Counterclaims at 17–18.

⁶⁵⁴ Epic Games FOF ¶ 192.

unconscionable. Here, the absence of substantive unconscionability is dispositive. 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, 123 Cal.Rptr.3d 1. 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.

⁶⁵⁵ See Epic Games FOF ¶¶ 191–192.

B. Breach of Contract

Under California law⁶⁵⁶, “the elements of a cause of action for breach of contract are (1) the existence of the contract, (2) plaintiff’s 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 apps⁶⁵⁷ 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

As noted, plaintiff has admitted that it breached the DPLA as Apple alleges and has conceded that, if

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 DPLA is “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)).

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 plaintiff's 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, 108 Cal.Rptr.3d 682 (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).

"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

⁶⁶⁰ See Stipulation, Dkt. No. 474.

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, 108 Cal.Rptr.3d 682 (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 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).

⁶⁶¹ Dkt. No. 66 ¶ 60 (emphasis supplied).

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

Apple contends that it is entitled to indemnification from Epic Games under this indemnification provision because plaintiff's 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

⁶⁶² PX-2619 ¶ 10.

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 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[.]”*

⁶⁶³ Epic Games FOF ¶¶ 573, 578.

Alki Partners, 4 Cal. App. 5th at 600–01, 209 Cal.Rptr.3d 151 (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, 209 Cal.Rptr.3d 151 (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, 209 Cal.Rptr.3d 151 (citations omitted)

⁶⁶⁴ Apple FOF ¶ 841.

(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 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 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:

⁶⁶⁵ Epic Games FOF ¶¶ 566–567.

(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,

⁶⁶⁶ See Dkt. No. 474 ¶ 3.

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 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.

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JA-413

[67 F.4th 946]

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

**EPIC GAMES, INC., Plaintiff-counter-
defendant-Appellant,**

v.

**APPLE INC., Defendant-counter-claimant-
Appellee.**

**Epic Games, Inc., Plaintiff-counter-defendant-
Appellant,**

v.

**Apple Inc., Defendant-counter-claimant-
Appellee.**

No. 21-16506, No. 21-16695

Argued and Submitted November 14, 2022
San Francisco, California

Filed April 24, 2023

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

OPINION

M. SMITH, Circuit Judge:

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

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 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

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.”

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 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

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

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 apps, 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 provide 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. Taken together, this

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.).

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 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

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.

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 substitutability 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 court 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

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

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.* (“*Amex*”), — U.S. —, 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, 104 S.Ct. 2731).

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 Fla*, 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

‘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.

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 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

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, 126 S.Ct. 1276 (*per se* 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.”).

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. *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, 82 S.Ct. 1502); *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 Small, Significant, Non-transitory Increase in Price 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

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.

a separate economic entity, [2] the product’s peculiar characteristics and uses, [3] unique production facilities, [4] distinct customers, [5] distinct prices, [6] sensitivity to price changes, and [7] specialized vendors.” *Brown Shoe*, 370 U.S. at 325, 82 S.Ct. 1502; *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, 112 S.Ct. 2072. 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, 112 S.Ct. 2072. 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, 112 S.Ct. 2072 (“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, 76 S.Ct. 994)).

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, 112 S.Ct. 2072; *see also id.* 477 n.24, 112 S.Ct. 2072 (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, 112 S.Ct. 2072; *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, 112 S.Ct. 2072 (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. 1997)). 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 provide 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, 112 S.Ct. 2072. And, as in *Kodak*, we made sure to emphasize that the aftermarket 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

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*,

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.”).

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 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

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, 112 S.Ct. 2072).

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 (D.C. Cir. 2001). While the *Microsoft* court ultimately excluded macOS from its market, it did so on 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)

remanding to determine whether the defendant possessed market power in the defendant-proposed market that the court adopted).

(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, 112 S.Ct. 2072. 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

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

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, 112 S.Ct. 2072. We need not decide what amounts to “general[]” unawareness because Epic presented *no* evidence of consumer unawareness. *See infra* section I.E.

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, 112 S.Ct. 2072. 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.” 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*’s 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, 112 S.Ct. 2072. 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, 112 S.Ct. 2072. 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 argument requires it to carry the heavy 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

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.

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.

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 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, 104 S.Ct. 2731; *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, 104 S.Ct. 1551. 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

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

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.*, 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, 104 S.Ct. 1464; *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.

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 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 (9th Cir. 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, 104 S.Ct. 1551 (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,

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.”

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 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*, — U.S. —, 141 S. Ct. 2141, 2160, 210 L.Ed.2d 314 (2021) (quoting *Amex*, 138 S. Ct. 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*, — U.S. —,

141 S. Ct. 2141, 210 L.Ed.2d 314. 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 Prod., 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, 118 S.Ct. 275.¹⁵ Antitrust

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 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

law assumes 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, 98 S.Ct. 1355. 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 construction projects. *Id.* at 681, 98 S.Ct. 1355. This “absolute ban” on competitive bidding imposed substantial anticompetitive effects, and the Society’s sole justification was that competition in the construction-

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, 112 S.Ct. 2072.

engineering market would lead engineers to perform “inferior work with consequent risk to safety and health.” *Id.* at 692–94, 98 S.Ct. 1355. 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, 98 S.Ct. 1355.

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, 106 S.Ct. 2009. 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, 106 S.Ct. 2009. 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, 106 S.Ct. 2009. 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, 110 S.Ct. 768. 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, 110 S.Ct. 768.

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 *intradbrand* 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, 112 S.Ct. 2072 (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, 104–08, 115–17, 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.

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

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.

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, 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

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

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 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 at 1073. 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

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.

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

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

court noted, in a world where Apple maintains its distribution restriction but payment processing is opened up, Apple would still 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*

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.

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

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.

represent a rote checklist” or “an inflexible substitute for careful analysis,” and approvingly cited one of the Areeda and Hovenkamp treatises as using a “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, 112 S.Ct. 2072 (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, 112 S.Ct. 2072 (citing *Jefferson Parish*, 466 U.S. at 21–22, 104 S.Ct. 1551). 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, 104 S.Ct. 1551. 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, 78 S.Ct. 514 (*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, 104 S.Ct. 1551 (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, 112 S.Ct. 2072 (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, 104 S.Ct. 1551. 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, Antitrust 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, 104 S.Ct. 1551.

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

²⁰ We also reject Apple’s argument 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

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.

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

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, 112 S.Ct. 2072 (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)).

(1979) (quoting *Topco Assocs.*, 405 U.S. at 606, 92 S.Ct. 1126). 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, 99 S.Ct. 1551 (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, 126 S.Ct. 1281; *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, 86 S.Ct. 1698; *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, 112 S.Ct. 2072; *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, 124 S.Ct. 872. 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

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.

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).

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*, — U.S. —, 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, 133 S.Ct. 2652).

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, 83 Cal.Rptr.2d 548, 973 P.2d 527, 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, 83 Cal.Rptr.2d 548, 973 P.2d 527 (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, 83 Cal.Rptr.2d 548, 973 P.2d 527; *accord Zhang*, 57 Cal. 4th at 379, 159 Cal.Rptr.3d 672, 304 P.3d 163. 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, 83 Cal.Rptr.2d 548, 973 P.2d 527. 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

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.

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 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

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.

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 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, 209 Cal.Rptr.3d 151. 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

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

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).

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.*, — U.S. —, 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.

JA-500

[Attorney listing omitted]

Attorneys for Defendant APPLE INC.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION

EPIC GAMES, INC.
Plaintiff, Counter-
defendant

v.

APPLE INC.,
Defendant,
Counterclaimant

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

**NOTICE OF
COMPLIANCE WITH
UCL INJUNCTION**

The Honorable Yvonne
Gonzalez Rogers

* * *

INTRODUCTION

On September 10, 2021, the Court issued an Injunction enjoining Apple from prohibiting in the United States developers from “(i) including in their apps and their metadata buttons, external links, or other calls to action that direct customers to purchasing mechanisms, in addition to In-App Purchas[e] [‘IAP’] and (ii) communicating with customers through points of contact obtained voluntarily from customers through account registration within the app.” Declaration of Mark A. Perry (“Perry Decl.”) Ex. 6 ¶¶ 1–2. The Ninth Circuit affirmed the Injunction on April 24, 2023 (Perry Decl. Ex. 9, at 77), and denied Apple’s petition for rehearing

on June 30, 2023 (Perry Decl. Ex. 10). The Supreme Court denied Apple’s petition for a writ of certiorari on January 16, 2024. Perry Decl. Ex. 20.

As of January 16, 2024, Apple has fully complied with the Injunction: It is striking the relevant parts of the App Store Review Guidelines applicable to apps on the U.S. storefronts of the iOS and iPadOS App Stores and implementing new rules that permit developers to (i) include in their apps buttons or links with calls to action that direct customers to purchasing mechanisms in addition to IAP and (ii) communicate with customers through points of contact obtained voluntarily from customers through account registration within the app. As a result of these changes, developers have the option of informing consumers, both within and outside the app, about alternative purchase mechanisms in addition to IAP. Apple respectfully makes this submission to summarize these changes for the Court.¹

BACKGROUND

For over a decade, Apple has imposed certain requirements on developers that use Apple’s proprietary tools and technologies protected by intellectual property to develop iOS and iPadOS apps. Those requirements are memorialized in the Apple Developer Program License Agreement (“DPLA”) and the App Store Review Guidelines. Perry Decl. Ex. 5, at 31, 143. Epic Games, Inc. initiated this lawsuit to challenge two contractual and technical restrictions:

¹ Apple incorporates by reference the definition of IAP used by the Court in its post-trial findings of fact and conclusions of law. Perry Decl. Ex. 5, at 3 n.3.

Apple’s requirement that developers distribute iOS and iPadOS apps through the App Store, and Apple’s requirement that iOS and iPadOS apps use IAP for in-app purchases of digital goods and services. After a bench trial, the Court held that these requirements do not violate state and federal antitrust laws or the California Unfair Competition Law (“UCL”). *Id.* at 162, 179. The Ninth Circuit affirmed. Perry Decl. Ex. 9.

Epic also challenged two anti-steering rules in the App Store Review Guidelines, which at the time of trial provided that (i) “[a]pps and their metadata may not include buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than [IAP],” and (ii) “[a]pps 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 [IAP].” Perry Decl. Ex. 11.²

The Court concluded that the quoted parts of these two Guidelines were unfair under the UCL because they impaired information transparency, noting that “[i]n the context of technology markets, the open flow of information becomes even more critical.” Perry Decl. Ex. 5, at 164. The Court expressed particular concern that these two provisions prohibited developers from “letting users know that [other payment] options exist.” *Id.* at 165. Accordingly, the Court entered a Permanent Injunction enjoining Apple from prohibiting app developers from

² As the Court noted, Apple has other anti-steering rules that are not implicated by the Injunction. *See* Perry Decl. Ex. 5, at 32 n.194.

(i) “including in their apps and their metadata buttons, external links, or other calls to action that direct customers to purchasing mechanisms, in addition to In-App Purchasing,” or (ii) “communicating with customers through points of contact obtained voluntarily from customers through account registration within the app.” Perry Decl. Ex. 6 ¶¶ 1–2.

The Court described the Injunction as a “limited measure” that “balance[d] the justification for maintaining a cohesive ecosystem with the public interest in unclinking the veil hiding pricing information on mobile devices and bringing transparency to the marketplace.” Perry Decl. Ex. 5, at 166. The Court recognized, however, that while transparency and consumer choice are important, Apple and millions of iPhone users still have a substantial interest in the “integrity of the ecosystem.” *Id.* at 164. The Court expressly noted that Apple could continue to require the use of IAP for in-app transactions. Perry Decl. Ex. 7, at 4. Moreover, the Court clarified that Apple could still “take steps to protect users” from new threats created by the Injunction’s mandate. Perry Decl. Ex. 7, at 3. The Court stated it would not “micromanage” the new framework. *Id.* The Ninth Circuit stayed the Injunction pending issuance of the appellate mandate. *See* Perry Decl. Ex. 8.

Shortly before the Court issued the Injunction, Apple entered into a settlement in another case that resolved the antitrust and unfair competition law claims of 99% of U.S. app developers, who, like Epic, had asserted that Apple monopolized an alleged iOS app and in-app product distribution services market. As part of the settlement, Apple agreed to revise

Guideline 3.1.3 and thereby allow developers to “send communications outside of the app to their user base about purchasing methods other than in-app purchase,” including through points of contact obtained through account registration. *See* Perry Decl. Ex. 13. Apple has made that revision. Declaration of Matthew Fischer (“Fischer Decl.”) ¶ 40. In doing so, Apple came into compliance with Paragraph 1(ii) of the Injunction. *See infra* § II. This Court approved the settlement as fair, reasonable, and adequate. *See* Perry Decl. Ex. 14.

Two additional developments have helped provide a framework for Apple’s implementation of Paragraph 1(i) of the Injunction. First, in response to a December 2021 decision by the Netherlands Authority for Consumers and Markets, which is currently on appeal, Apple created an “entitlement” framework to permit dating apps on the Netherlands iOS and iPadOS App Store storefronts to inform users of other purchase options (both within and outside of the app) while still protecting user security. *See* Perry Decl. Ex. 15; *see also* note 4, *infra* (explaining “entitlement” in this context). Second, in March 2022, Apple again used an entitlement and usage requirements to implement changes to the Guidelines for reader apps as part of its effort to resolve a competition investigation by the Japan Fair Trade Commission. *See* Perry Decl. Ex. 16.³

³ Reader apps are apps that provide digital content—i.e., magazines, newspapers, books, audio, music, or video—as the primary functionality of the app. With reader apps, people can sign into their account created outside of the app, letting them view and enjoy previously purchased media content or content subscriptions on their Apple device. This Guideline permits reader apps to link to a website that is owned or maintained by

On April 24, 2023, the Ninth Circuit affirmed the Injunction in all respects. Perry Decl. Ex. 9. The Ninth Circuit stayed the mandate (and the Injunction) pending Apple’s filing of a petition for a writ of certiorari with the U.S. Supreme Court. Perry Decl. Ex. 19. The U.S. Supreme Court denied Apple’s petition on January 16, 2024. Perry Decl. Ex. 20.

Apple is publishing the amended Guidelines and supporting materials on January 16, 2024.

DISCUSSION

I. APPLE NOW PERMITS DEVELOPERS WITH APPS ON THE iOS OR iPadOS APP STORE U.S. STOREFRONTS TO COMMUNICATE WITHIN THE APP REGARDING ALTERNATIVE PURCHASING MECHANISMS

Paragraph 1(i) of the Injunction enjoins Apple from prohibiting developers from including in their apps buttons, links, or other calls to action that direct customers to purchasing mechanisms in addition to IAP. Apple is complying with this requirement by adopting a new Guideline that expressly permits developers with apps on the iOS or iPadOS App Store U.S. storefronts to include buttons or external links with calls to action within their apps that direct users to alternative, out-of-app purchasing mechanisms.

Apple has long required that all iOS and iPadOS apps developed using Apple’s proprietary tools and technologies protected by intellectual property use IAP for in-app transactions for digital goods and

the developer for the purpose of account creation or management, subject to an entitlement and usage requirements. *See* Fischer Decl. ¶ 21.

services. Fischer Decl. ¶ 7. The Court rejected Epic’s challenge to the IAP requirement and has made clear that its Injunction does not require Apple to change this requirement. Perry Decl. Ex. 7, at 4. In addition, developers are already permitted to (and do) include within their apps certain external links, directing customers to websites for support and other services. Fischer Decl. ¶ 9. This Court has previously noted that “[c]onsumers are quite used to linking from an app to a web browser.” Perry Decl. Ex. 7, at 3. What Apple has heretofore precluded are external links that direct customers to alternative *purchasing* mechanisms. In response to the Injunction, Apple is removing that prohibition with respect to apps on the U.S. storefronts of the iOS and iPadOS App Stores.

Section 3.1.1(a) of the Guidelines will now provide:

3.1.1(a) Link to Other Purchase Methods

- Developers may apply for an entitlement to provide a link in their app to a website the developer owns or maintains responsibility for in order to purchase such items. Learn more about the entitlement. In accordance with the entitlement agreement, the link may inform users about where and how to purchase those in-app purchase items, and the fact that such items may be available for a comparatively lower price. The entitlement is limited to use only in the iOS or iPadOS App Store on the United States storefront. In all other storefronts, 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.

If your app engages in misleading marketing practices, scams, or fraud in relation to the entitlement, your app will be removed from the App Store and you may be removed from the Apple Developer Program.

Fischer Decl. ¶ 13; *see also id.* Ex. 1. Under Section 3.1.1(a), Developers may apply for the StoreKit External Purchase Link Entitlement (US) (the “Link Entitlement”).⁴ Developers who are approved for the entitlement can include within their apps buttons or links with calls to action directing users to out-of-app purchasing mechanisms other than IAP. Fischer Decl. ¶ 14. For convenience, we refer to the in-app communications permitted by the Link Entitlement as “External Purchase Links.”

As Apple has previously explained, and Epic has never disputed, unregulated external payment links will “harm users, developers, and the iOS platform more generally.” Perry Decl. Ex. 12 ¶ 10.5.⁵ In order

⁴ An “entitlement” is a right or privilege granted to a developer to activate certain features, capabilities, technologies, or functionalities for its app not otherwise available to developers. Fischer Decl. ¶ 15. Apple requires entitlements for many features, particularly where privacy, safety, and security concerns are heightened or where a requested feature carries additional risk to users. *Id.*

⁵ Since the Injunction was entered, Epic has entered into two settlements with the Federal Trade Commission that, based on publicly available information, appear to bolster Apple’s concern that developers may take advantage of children and other users. *See* Perry Decl. Exs. 17, 18. Specifically, the FTC found that, among other things, Epic had deceptively saved users’ payment information without their knowledge, thus enabling kids to make impulse purchases without their parents’ knowledge or approval. *Id.* Ex. 17.

to minimize the considerable risks posed by external payment links, Apple will require developers to adhere to certain requirements to qualify for and use the Link Entitlement. These requirements are necessary to protect user privacy and security, maintain the integrity of Apple's ecosystem, promote the flow of information, avoid user confusion, and enable efficient review of developers' apps by App Review. They also guard against the uncompensated use of, among other things, Apple's platform, services (including but not limited to marketing and external advertising), and proprietary tools and technologies protected by intellectual property. Fischer Decl. ¶¶ 22, 35. The requirements are informed by Apple's substantial experience. *Id.* ¶ 21; *see also* Perry Decl. Ex. 7, at 3 (noting that Apple could look to "alternatives outside the app" like the reader rule to promote security and maintain its ecosystem); Perry Decl. Ex. 5, at 37 (recognizing that privacy and security are not "static" issues, and require Apple to respond and react to new developments and technological advancements).

Entitlement Application. A developer who wants to use the Link Entitlement must complete and submit a request form to Apple providing details about its app, the External Purchase Link it wishes to include, and the website domain to which the External Purchase Link will direct users. *See* Fischer Decl. ¶ 16; *see also id.* Ex. 4. Developers approved for the entitlement may "provide a link in their app to a web site the developer owns or maintains responsibility for in order to purchase" digital goods and services for use within the app. *Id.* ¶ 13.

In order to qualify for the Link Entitlement, developers must certify that the third-party payment

services provider(s) they have contracted with for out-of-app purchasing mechanisms meet certain industry standards for payment processors, that the digital goods and services users purchase on their websites can be used within the apps, and that they will provide users with processes for disputing unauthorized transactions, managing subscriptions, and requesting refunds. *See* Fischer Decl. ¶¶ 17–18. Apps participating in the Apple Video Partner Program or the News Partner Program are not eligible for the Link Entitlement. *Id.* ¶ 19. This application process provides notice to Apple that the developer intends to use the Link Entitlement and allows Apple to confirm whether a developer is adhering to the rules and requirements applicable to the Link Entitlement. *Id.* ¶ 20.

Technical Requirements. A developer who is approved for the Link Entitlement must abide by the requirements set forth in the StoreKit External Purchase Link Entitlement Addendum for US Apps. Fischer Decl. ¶ 16; *see also* Fischer Decl. Ex. 2. These requirements serve a variety of purposes, but they all arise largely from the fact that an External Purchase Link encourages users to leave the app and the Apple ecosystem, and undertake a transaction on the open Internet. *Id.* ¶ 22. Apple has designed the App Store, iOS, and iPadOS so that it can use established and predictable mechanisms to review apps for a variety of purposes, including protecting user security and privacy and deterring fraud and scams. Apple lacks similar capabilities with respect to transactions on the open Internet, as the Court has already recognized. Perry Decl. Ex. 5, at 108–09. Accordingly, the requirements of the Link Entitlement help to inform users of the benefits they

may be losing and the risks they are assuming when they leave the Apple ecosystem, while still allowing developers to communicate with users regarding purchase alternatives. Fischer Decl. ¶ 22.

These requirements include:

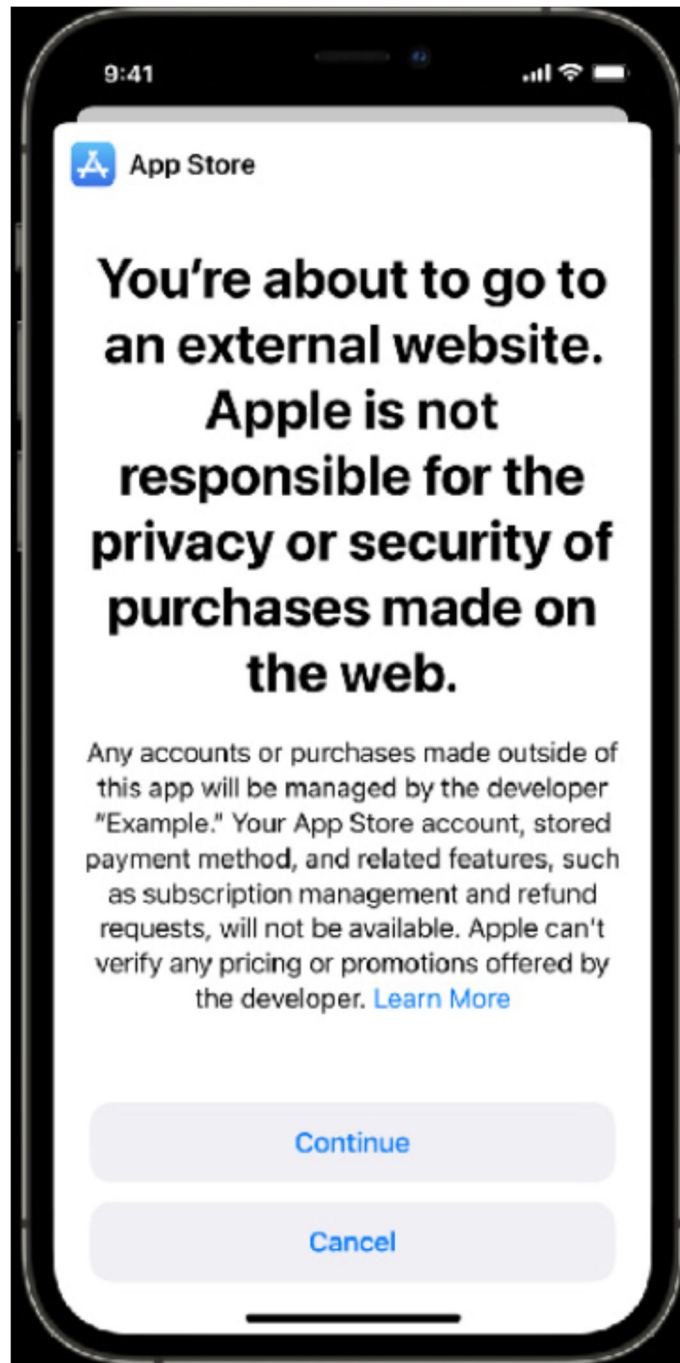
3.1 Your StoreKit External Purchase Link App (US) must continue to offer in-app purchases in accordance with the Developer Agreement and the App Store Review Guidelines. Your StoreKit External Purchase Link App (US), including any link You provide under this Addendum, may not discourage end users from making in-app purchases.

This requirement ensures that IAP remains available for in-app transactions in digital goods and services. Fischer Decl. ¶ 24. As noted above, this Court has already ruled that Apple may continue to require developers to offer IAP for in-app transactions in digital goods and services.

3.1 Prior to each instance of linking from Your StoreKit External Purchase Link App (US) to an external website for purchases, You must:

- Call the `canMakePayments` API and determine that the end user may authorize payments; and
- Call the StoreKit External Purchase Link API and determine that the end user is a user of the United States App Store, and if so, surface to the end user the associated system disclosure

These requirements help ensure that users are adequately informed about alternative purchasing options. The system disclosure sheet explains (1) that the user is leaving the app and going to the open Internet to make purchases through a mechanism other than IAP, and (2) that certain App Store protections and features will not be available. *See* Fischer Decl. ¶¶ 26–27. Apple requires that users tap a button that says “Continue” before being redirected to the developer’s website. *See* Fischer Decl. ¶ 26. Apple has already implemented a similar requirement for reader apps. *See* Perry Decl. Ex. 16 (Reader Apps Addendum) § 3.3. Apple is implementing this requirement because users should, in the first instance, understand that they are tapping a link that will take them outside of the Apple ecosystem and that they are assuming risks by doing so. *See* Fischer Decl. ¶ 26. The requirement is thus consistent with the underlying purpose of the Injunction—that users be apprised of their choices. Perry Decl. Ex. 5, at 179; *see also id.* Ex. 9, at 85 (Injunction helps consumers “becom[e] would-be . . . consumers” of other platforms). Additionally, the system disclosure sheet advises users that certain App Store-specific features will not be available if they proceed, such as the ability of Apple to provide subscription management or process refund requests for digital goods and services. *See* Fischer Decl. ¶¶ 26–27.



Apple is concerned that some developers may provide information within their apps that does not accurately reflect what users can receive or are charged on a website. Apple will have less ability to prevent or address fraudulent or misleading statements made by developers in connection with linked transactions than it does (and its users are used to) with IAP. Accordingly, the system disclosure sheet may require adjustment to protect the user experience and mitigate any confusion.

3.3 The link You provide in Your StoreKit External Purchase Link App (US) under this Addendum must:

- Go directly to Your website without any redirect or intermediate links or landing page;
- Open a new window in the default browser on the device, and may not open a web view;
- Not pass additional parameters in the URL, to protect the end user (for example, their privacy);
- Be statically-defined in the <<SKExternalPurchaseLink>> in Your app's info.plist before submission to the App Store;
- Be submitted with Your StoreKit External Purchase Link App (US) to the App Store, and shall be resubmitted if the URL changes;

- Be accompanied by language and a button adhering to the requirements provided in the Apple Materials;
- Not mimic Apple’s in-app purchase system, nor discourage end users from using it;
- Be displayed in Your StoreKit External Purchase Link App (US) on no more than one app page the end user navigates to (not an interstitial, modal, or pop-up), in a single, dedicated location on such page, and may not persist beyond that page;
- Not be displayed on any page that is part of an in-app flow to merchandise or initiate a purchase using in-app purchase; and
- Comply with any additional requirements provided in the Apple Materials.

These requirements are designed to minimize fraud, scams, and confusion. Developers must take responsibility for the linked website, send users only to that website, and inform Apple of that website so that Apple can review the app (including the destination of the proposed External Purchase Link). Fischer Decl. ¶ 28.

These requirements give developers a meaningful opportunity to “entice users to other platforms” (Perry Decl. Ex. 5, at 93), while also enabling users to make an informed choice between “the convenience of IAP” and out-of-app payment systems (Perry Decl. Ex. 7, at

4).⁶ The requirements regarding placement of the External Purchase Links serve multiple purposes, including preventing users from being overloaded with duplicative information that might interrupt their app experience, ensuring a consistent user experience, minimizing confusion between options, and reducing the risk of users inadvertently leaving the app. *See* Fischer Decl. ¶ 28; *see also* Perry Decl. Ex. 5, at 164 (describing Injunction’s purpose of facilitating the flow of information). They also prevent developers from free-riding on Apple’s reputation for creating a “seamless” purchasing mechanism and protect Apple’s right to require IAP for all in-app purchases, which the Court did not enjoin. Fischer Decl. ¶ 28; Perry Decl. Ex. 7, at 4; *see also* Perry Decl. Ex. 5, at 66 (“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.”).

The “Apple Materials” referred to in Section 3.3 include several templates that Apple is providing to developers to include as part of their External Purchase Links. Fischer Decl. ¶ 29. These templates allow developers to advertise prices to users, but use curated language to avoid misleading or confusing offers. *Id.* ¶ 30. For example, developers may insert language stating: “To get [X]% off, go to [link to developer’s website],” or “Lower price offered at [link to developer’s website].” *Id.* ¶ 29. Users will therefore

⁶ Because the Court upheld Apple’s IAP requirement and the Ninth Circuit affirmed (Perry Decl. Ex. 5, at 150; Perry Decl. Ex. 9), the Guidelines will still require that developers use IAP as the exclusive purchasing mechanism for in-app purchases.

be able to price-compare across platforms, consistent with the Injunction’s purpose. *See* Perry Decl. Ex. 5, at 164 (noting “the benefit of price advertising” and the desirability of “cross-platform information” in technology markets). These templates also make it more efficient for Apple to review developers’ apps for compliance with Link Entitlement requirements and App Review Guidelines, while still preserving developers’ ability to convey information to their users. *See* Perry Decl. Ex. 7, at 4 (“Links can be tested by App Review”); Perry Decl. Ex. 5, at 179 (Injunction should “increase competition, increase transparency, [and] increase consumer choice and information while preserving Apple’s iOS ecosystem which has procompetitive justifications”).

These templates do not allow developers to make subjective claims within the app about competing purchasing mechanisms. Fischer Decl. ¶ 30. Developers will still be able to communicate information to users, in-app, such that users can make informed decisions whether to leave the app for other options. *See* Perry Decl. Ex. 5, at 165 (noting that the main objection to the prior anti-steering provisions was that they prohibited developers from “letting users know that [other payment] options exist”). And importantly, as described below, Apple places no limitations on developers’ *out-of-app* communications with users. Fischer Decl. ¶ 30.

3.5 You may not include information about purchasing on Your website or a link to Your website for purchasing on the product page of Your StoreKit External Purchase Link App (US).

This requirement limits the External Purchase Link to the app itself rather than the product page in the App Store on which the app appears. Fischer Decl. ¶ 31.

3.6 Digital purchases sold on Your website to end users after link out that are marketed as being for use in an Application must be available for use in that Application.

This requirement helps ensure that users are able to use the digital goods and services that they purchase from the developer’s external website within an app. Fischer Decl. ¶ 32.

Commission. The Court did not enjoin Apple’s core business model of monetizing the App Store by charging a percentage commission rate on sales of digital goods and services facilitated by its platform. Instead, it found that “under all models, Apple would be entitled to a commission or licensing fee, even if IAP was optional.” Perry Decl. Ex. 5, at 67; *see also id.* at 150 (“Even in the absence of IAP, Apple could still charge a commission on developers.”). Accordingly, in view of the substantial value Apple provides to developers, Apple will charge a commission on certain out-of-app purchases of digital goods and services. Fischer Decl. ¶ 33. Epic has already recognized that this approach is consistent with the injunction entered in this case: In a publicly available letter regarding parallel litigation against Google, Epic (represented by the same counsel as in this case) acknowledged that an “injunction such as the one ordered in *Epic v. Apple*” would “not prevent Google from . . . introducing a new fee . . . on linked out-of-app transactions.” Perry Decl. Ex. 21, at 3–4.

Apple will apply a 27% commission to transactions for digital goods and services that take place on a developer's website within seven days after a user taps through an External Purchase Link from the system disclosure sheet to an external website. Fischer Decl. ¶ 33. Developers eligible for and participating in the App Store Small Business Program will be charged a 12% commission on purchases made within seven days after a user taps on an External Purchase Link and continues from the system disclosure sheet to an external website. *Id.* ¶ 34. Auto-renewals in the second year or later of an auto-renewing subscription that was purchased within seven days after a user taps through an External Purchase Link from the system disclosure sheet will be charged a 12% commission. *Id.* Apple's commission policies regarding purchases made through External Purchase Links are set forth in the StoreKit External Purchase Link Entitlement Addendum for US Apps. *See* Fischer Decl. Ex. 2.

Charging a commission on transactions facilitated by External Purchase Links not only complies with the Injunction's plain terms (*see* Perry Decl. Ex. 21, at 3–4), but is also consistent with the Court's rationale for upholding Apple's other App Store policies. All App Store developers—including those who place buttons or links with calls to action in their apps—benefit from (among other things) Apple's platform integrity, proprietary tools and technologies protected by intellectual property, developer services and support, services that help developers acquire, retain, and reengage users, marketing and external advertising, and a safe environment for users to download and purchase apps and in-app content. Fischer Decl. ¶ 35. Developers benefit from Apple's

“enormous” investment in “tools and features for iOS” (Perry Decl. Ex. 5, at 113–14), including the “thousands of developer tools, SDKs, and APIs” and Apple’s “constant upgrading of . . . cellphones to allow for more sophisticated apps.” (*id.* at 67; *see id.* at 150 (“Apple is entitled to some compensation for use of its intellectual property.”)). Developers also benefit from “access to Apple’s vast consumer base” (Perry Decl. Ex. 9, at 14), as well as “the safe environment created by the App Store,” which encourages users to “download apps freely and without care” (Perry Decl. Ex. 5, at 111; *see also id.* at 145 (“Apple provides a safe and trusted user experience on iOS, which encourages users and developers to transact freely and is mutually beneficial.”); Perry Decl. Ex. 9, at 58 (Apple’s provision of a “safe and trusted user experience . . . “increas[es] the per-user average number of app transactions”)). “[T]he developer’s use of the App Store platform . . . and access to Apple’s user base . . . justifies a commission.” Perry Decl. Ex. 5, at 118; *see also id.* at 150 n.617 (developers should not be allowed to “avoid the commission while benefitting from Apple’s innovation and intellectual property free of charge”).

Apple is limiting the commission to those transactions taking place on the developer’s website within seven days after a user taps on an External Purchase Link and continues from the system disclosure sheet to an external website, consistent with how other platforms address similar kinds of transactions. Fischer Decl. ¶ 36. Undoubtedly, this window will not capture all transactions that Apple has facilitated through the App Store, but it balances (1) Apple’s entitlement to a commission for purchases facilitated through the App Store, even if the user

waits a small amount of time after leaving the App Store to actually finalize the purchase, with (2) the fact that the longer the time between the link out and the purchase, the more attenuated the connection between the purchase and Apple's facilitation of the purchase. Through out-of-app communications (*see infra*), developers can encourage users to go directly to the website, without the use of an External Purchase Link and without incurring a commission. At all times, users remain free to select whichever purchasing method they prefer.

To help ensure collection of Apple's commission, developers are required to provide a periodic accounting of qualifying out-of-app purchases, and Apple has a right to audit developers' accounting to ensure compliance with their commission obligations and to charge interest and offset payments. Fischer Decl. Ex. 2 § 7. As both this Court and the Ninth Circuit recognized, collecting a commission in this way will impose additional costs on Apple and the developers. *See* Perry Decl. Ex. 5, at 150 n. 617 (contractual auditing "would seemingly impose both increased monetary and time costs to both Apple and the developers"); Perry Decl. Ex. 9, at 64. It also carries considerable risk to Apple: Although developers are contractually obligated to pay the commission, as a practical matter, with hundreds of thousands of developers with apps on the U.S. storefronts for the iOS and iPadOS App Stores, collection and enforcement will be exceedingly difficult and, in many cases, impossible.

Non-Compliance. Apple may terminate the Link Entitlement of any developer who violates the terms of the StoreKit External Purchase Link Entitlement Addendum for US Apps, and may, in its discretion,

remove the offending app, terminate the developer's account with Apple, or take any other appropriate action to stop the violation of the App Store rules. *See* Fischer Decl. ¶¶ 38–39. In Apple's view, these measures are necessary to enforce the above guardrails and protect users. *Id.* Apple will be monitoring the use of External Purchase Links and may modify the requirements for the Link Entitlement if issues arise that are not adequately addressed in the current requirements. *Id.* ¶ 37.

II. APPLE ALSO PERMITS DEVELOPERS TO COMMUNICATE OUTSIDE THE APP REGARDING ALTERNATIVE PURCHASING MECHANISMS

Paragraph 1(ii) of the Injunction enjoins Apple from prohibiting developers from communicating with customers using contact information obtained within the app. Apple came into compliance with this provision as part of the *Cameron* settlement, which has already been approved by this Court. *See* Perry Decl. Ex. 14. Guideline 3.1.3 now provides, in relevant part:

Developers can send communications outside of the app to their user base about purchasing methods other than in app purchase.

Fischer Decl. ¶ 40. Separately, Guideline 5.1.1(x) provides:

Apps may request basic contact information (such as name and email address) so long as the request is optional for the user, features and services are not conditional on providing the information, and it

complies with all other provisions of these guidelines, including imitations on collecting information from kids.

Id. ¶ 42. Accordingly, Apple does not limit developers’ ability to send out-of-app communications to users regarding alternative purchasing methods. *Id.* ¶ 41. These Guidelines comply with the plain terms of the Injunction because developers now can “[c]ommunicat[e] with customers through points of contact obtained voluntarily from customers through account registration within the app.” Perry Decl. Ex. 6 ¶ 2.

CONCLUSION

For the foregoing reasons, Apple has timely complied with the Court’s Injunction.

Dated: January 16, 2024 Respectfully submitted,

WEIL, GOTSHAL &
MANGES LLP

By: /s/ Mark A. Perry
WEL, GOTSHAL &
MANGES LLP

Attorney for Apple Inc.

JA-523

[Attorney listing omitted]

*Attorneys for Plaintiff and Counter-defendant
Epic Games, Inc.*

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

EPIC GAMES, INC.,
Plaintiff, Counter-
defendant,
v.
APPLE INC.,
Defendant,
Counterclaimant.

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

**PLAINTIFF EPIC
GAMES, INC.'S
NOTICE OF MOTION
AND MOTION TO
ENFORCE
INJUNCTION**

Date: April 30, 2024
(noticed date)

Courtroom: 1, 4th Floor

Judge: Hon. Yvonne
Gonzalez Rogers

**NOTICE OF MOTION AND MOTION
TO ALL PARTIES AND THEIR
ATTORNEYS OF RECORD:**

PLEASE TAKE NOTICE THAT on April 30, 2024,
at 2:00 p.m., or as soon thereafter as the matter may
be heard, in the United States District Court for the
Northern District of California, before the Honorable
Yvonne Gonzalez Rogers, Plaintiff and Counter-

Defendant Epic Games, Inc. will move this Court for an Order Granting Epic's Motion to Enforce Injunction.

This Motion is made on the grounds that Defendant and Counterclaimant Apple Inc. is in violation of this Court's order permanently restraining and enjoining it from "prohibiting developers from . . . including in their apps and their metadata buttons, external links, or other calls to action that direct customers to alternative purchasing methods, in addition to In-App Purchase". (Dkt. 813.)

This motion is based upon the pleadings in this action, this Notice of Motion, the Memorandum of Points and Authorities filed herewith, the Declaration of Benjamin Simon ("Simon Decl."), the Declaration of Christian Bailey Owens ("Owens Decl."), the Declaration of Yonatan Even ("Even Decl.") along with its accompanying exhibits, all matters with respect to which this Court may take judicial notice, and such oral and documentary evidence as may be presented to the Court.

* * *

PRELIMINARY STATEMENT

Apple is in blatant violation of this Court's injunction. Its new App Store policies continue to impose prohibitions on developers that this Court found unlawful and enjoined. Moreover, Apple's new policies introduce new restrictions and burdens that frustrate and effectively nullify the relief the Court ordered.

In its September 21, 2021 order finding that Apple violated the California Unfair Competition Law (the "UCL"), this Court found that Apple insulated itself

from competition by preventing developers from “communicat[ing] lower prices on other platforms either within iOS or to users obtained from the iOS platform” and that Apple’s conduct “‘threaten[ed] an incipient violation of an antitrust law’ by preventing informed choice among users of the iOS platform”. (Dkt. 812 at 163-64 (the “Rule 52 Order”).) The Court reasoned that “[i]n the context of technology markets, the open flow of information becomes even more critical . . . [because] information costs may create ‘lock-in’ for platforms”, and that “the ability of developers to provide cross-platform information is crucial” to facilitate competition. (*Id.* at 164.) As a result of Apple’s anti-steering provisions and other restrictive policies, Apple had “excessive operating margins under any normative measure”, “the commission rate driving the excessive margins has not been justified” and “the costs to developers are higher because competition is not driving the commission rate”. (*Id.* at 163.) To remedy Apple’s violations of the UCL, the Court enjoined Apple from prohibiting developers from including in their iOS apps “buttons, external links, or other calls to action” that direct customers to alternative purchasing methods outside of the app. (Dkt. 813 ¶ 1 (the “Injunction”).)

Compliance with the Injunction should have been simple; all Apple needed to do was to remove the illegal anti-steering language from its App Store Review Guidelines (the “Guidelines”) so that developers could provide truthful information to users and enable them to act on it. But Apple chose a markedly different path. On January 16, 2024—after its challenges to the Injunction were exhausted—Apple filed a notice contending that it had updated its

policies to comply with this Court’s mandate. (Dkt. 871 (the “Notice of Compliance” or “Notice”).) In fact, Apple’s Notice is one of *non*-compliance. As explained in the Notice, Apple replaced its blanket prohibition on steering with an elaborate new scheme that is guaranteed to continue extracting excessive commissions from developers and prevent developers from “communicat[ing] lower prices on other platforms”. (Dkt. 812 at 163-64.) Apple’s new scheme so pervasively taxes, regulates, restricts and burdens in-app links directing users to alternative purchasing mechanisms on a developer’s website (“External Links” or “Links”) as to make them entirely useless. Moreover, Apple continues to completely prohibit the use of “buttons . . . or other calls to action” in direct contravention of this Court’s Injunction. (See Dkt. 813 ¶ 1.)

Apple violates the Injunction in three ways. *First*, with respect to External Links, Apple has imposed a new fee and enacted a slew of new rules that work together to make the links commercially unusable. This new fee and accompanying web of restrictions subvert the purpose of the Injunction, allowing Apple to continue extracting its excessive commissions and making it effectively impossible for a developer to inform users about, and direct users toward, an alternative platform for making a purchase. Apple now requires a developer to:

- pay Apple a new fee of 27% on any purchases users make **outside** the app up to one week after clicking a Link;
- apply for and receive Apple’s permission (“Link Entitlement”) for the inclusion of any Link;

- abide by Apple’s mandates concerning the language, look and location of any Link—Links may not be prominently displayed, may not pop up and may not be placed within any purchase flow (*i.e.*, in any context relevant to steering users to alternative purchasing mechanisms);
- present users with a “scare screen” intended to deter users from making purchases outside the app; and
- link users to a single static URL (*i.e.*, to a general landing page where users are neither logged in to their accounts nor presented with any specific product they were seeking to purchase).

Notably, Apple’s new fee on purchases made outside the app, in and of itself, is enough to frustrate the very purpose of the Injunction; if Apple is allowed to tax out-of-app purchases, those purchases could never constrain Apple’s pricing of IAP, and developers and consumers would not have any reason to use these alternative transacting options. The fact that, on top of this new fee, Apple has designed External Links to be so riddled with additional economic disincentives, technical requirements and user frictions further negates any incentives developers could have to use such Links, as well as the benefits to consumers the Court sought to achieve by allowing developers to inform users of competitive options. These policies collectively operate as a *de facto* prohibition on External Links, and violate the Injunction.

Second, Apple continues to categorically prohibit any steering using “buttons” or “other calls to action”. Specifically, Apple does not allow External Links that resemble a “button” in any way. And developers are

likewise prohibited from including in their apps simple statements—without any attendant link—stating truthfully that items or subscriptions may be purchased directly on the web at a lower price. Apple’s ban on “buttons” or “other calls to action” is a brazen violation of the Court’s Injunction, which explicitly requires Apple to allow developers to use “*buttons*, external links, or *other calls to action*” that direct customers to purchasing mechanisms other than IAP. (Dkt. 813 ¶ 1 (emphases added).)

Third, Apple’s Guideline 3.1.3 still prohibits certain apps, including all multiplatform services (*i.e.*, apps that operate across multiple platforms and allow users to access the same content across these platforms, including popular games such as Minecraft), from “within the app, encourag[ing] users to use a purchasing method other than in-app purchase”. (Dkt. 874 Ex. 1 § 3.1.3.) This language expressly contravenes the Injunction by prohibiting any steering to alternative purchasing methods. Apple has now stated in a separate website post that multiplatform services may obtain an External Link entitlement notwithstanding the express prohibition in Guideline 3.1.3. But Apple has refused repeated requests from Epic to amend the Guidelines themselves to remove the general prohibition on steering or to otherwise clarify that apps covered by Guideline 3.1.3 can still qualify for External Links.

With these new policies, Apple continues to charge unjustified fees and intentionally prevent the “open flow of information”. Apple’s goal is clear: to prevent purchasing alternatives from constraining the supracompetitive fees it collects on purchases of digital goods and services. Apple’s so-called compliance is a sham. Epic therefore seeks an order

(i) finding Apple in civil contempt, (ii) requiring Apple to promptly bring its policies into compliance with the Injunction and (iii) requiring Apple to remove all anti-steering provisions in Guideline 3.1.3.

FACTUAL BACKGROUND

A. The Court’s Rule 52 Order and UCL Injunction

Epic brought suit under both federal and state competition statutes, including the UCL, seeking an injunction against Apple. (Dkt. 1.) Epic’s UCL claim challenged (among other things) Apple’s anti-steering provisions, which stifled the ability of iOS app developers to communicate to their users the existence of alternative—and potentially cheaper—purchasing options outside of an app. (*Id.* ¶¶ 130, 131; *see also* Dkt. 407 ¶ 27.)

On September 10, 2021, this Court found that “Apple’s anti-steering provisions hide critical information from consumers and illegally stifle consumer choice”. (Dkt. 812 at 2.) The Court reasoned that the free flow of price information is a necessary competitive constraint on what it characterized as Apple’s “excessive operating margins under any normative measure” and that “[t]he costs to developer[s] are higher because competition is not driving the commission rate”. (*Id.* at 163.) The Court noted that “where consumers have the benefit of price advertising, retail prices often are dramatically lower than they would be without advertising”. (*Id.* at 164 (quotation omitted).) However, Apple’s anti-steering rules “enforced silence to control information and actively impede users from obtaining the knowledge to obtain digital goods on other platforms”. (*Id.* at 165.)

Accordingly, this Court issued an injunction striking Apple’s Guideline prohibiting the inclusion within iOS apps of “buttons, external links or other calls to action that direct customers to purchasing mechanisms other than in-app purchase”.¹ (*Id.* at 163-64.) In issuing the Injunction, the Court stated that its intent was to further the “public interest in unclocking the veil hiding pricing information on mobile devices and bringing transparency to the marketplace”. (*Id.* at 166.)

B. Subsequent Procedural History

Apple moved this Court to stay the Injunction pending its appeal to the Ninth Circuit, which this Court denied. (Dkt. 830.) In its order denying the stay, this Court emphasized that “it should be [consumers’] choice” whether to use IAP or an external alternative, because “[c]onsumer information, transparency and consumer choice is in the interest of the public”. (*Id.* at 4.) The Court further clarified that, while it did not limit the fee that Apple charges for IAP and did not enjoin Apple from requiring IAP to be used to process in-app purchases of digital goods and services, IAP had to “compete on pricing” with external alternatives. (*Id.*)

On December 8, 2021, the Ninth Circuit granted Apple’s motion to stay the Injunction pending appeal. (C.A.9. No. 21-16695, Dkt. 14 at 2.) On April 24, 2023,

¹ Specifically, the Court enjoined Apple from “prohibiting developers from (i) including in their apps and their metadata buttons, external links, or other calls to action that direct customers to purchasing mechanisms, in addition to In-App Purchasing and (ii) communicating with customers through points of contact obtained voluntarily from customers through account registration within the app.” (Dkt. 813 ¶ 1.)

the Ninth Circuit affirmed the Injunction in all respects. *Epic Games, Inc. v. Apple, Inc.*, 67 F.4th 946, 1002-03 (9th Cir. 2023). Apple then filed a petition for writ of certiorari with the U.S. Supreme Court on September 23, 2023. (Petition for Writ of Certiorari, *Apple Inc. v. Epic Games, Inc.*, No. 23-344 (Sept. 23, 2023).) That petition was denied on January 16, 2024. (See Dkt. 871-4 Ex. 20.) The Injunction then came into effect. (*Id.* Exs. 8, 19.)

C. Apple’s “Notice of Compliance”

On January 16, 2024, following the Supreme Court’s denial of Apple’s petition for a writ of certiorari, Apple filed a purported “Notice of Compliance” with this Court. (Dkt. 871.) The Notice of Compliance introduced updated Guidelines (*see* Dkt. 874 Ex. 1), a new StoreKit External Purchase Link Entitlement Addendum for US Apps (*see* Dkt. 874 Ex. 2 (the “Addendum”)) and a printout of the Apple website’s StoreKit External Purchase Link Entitlement (US) Support Page (*see* Dkt. 874 Ex. 3), which set forth Apple’s updated policies regarding External Links. These policies make clear that Apple continues to engage in enjoined conduct.

1. Apple’s New Policies Regarding External Links

The new policies nominally permit External Links, but only under a strict set of terms and conditions that make them unusable. These include:

New Commission. Developers are required to pay Apple a new percentage-based fee of up to 27% on all transactions for digital goods and services that take place *outside the app* within seven days after the

user clicks an External Link (“Linked Purchases”).² (Dkt. 871 at 12.) This new fee on purchases made outside the app is set at a rate that is 3% lower than the corresponding fee that Apple would charge on in-app sales utilizing Apple’s In-App Purchase—27% for purchases on apps not participating in any special programs (as compared to 30% for in-app purchases), and 12% for subscription payments in the second year of the subscription or for developers participating in the Small Business Program (as compared to 15% for in-app purchases). (*Id.* at 12-13.) This is essentially the same fee that this Court found Apple has never justified and is not driven by competition, only now it is being charged—for the first time—on purchases that take place *outside* of an iOS app. The amount of this fee removes the economic incentive to incorporate an External Link into an app, because developers will have to pay more than 3% just to process Linked Purchases. (*See, e.g.*, Simon Decl. ¶ 32; Owens Decl. ¶¶ 9, 18, 26, 32, 33.) As a result, developers would not be able to offer consumers lower prices on Linked Purchases than they offer on in-app purchases processed through IAP. (Simon Decl. ¶ 32.)

² Note that Linked Purchases need not be causally linked to the use of an External Link. Instead, Apple collects its new 27% fee on any purchase made on the developer’s website within seven days of an External Link being clicked, even if such purchase was completed days later, in a different browser window than was opened by the External Link, or even on a different device. (*See* Dkt. 874 Ex. 2 § 1 (defining “Transaction” as *any* “sale of digital goods or services . . . on a website You own or have responsibility for (‘Your website’), provided that the sale was initiated within seven (7) calendar days after a link out . . . from your [app]”); *id.* § 5.1 (stating that “Apple shall be entitled to a commission equal to [up to] twenty-seven percent (27%) of all Transaction proceeds made on Your website”).)

Entitlement Requirement. Under Section 3.1.1(a) of the Guidelines, a developer cannot include an External Link within its app unless it applies for, and is granted, a Link Entitlement. (See Dkt. 874 Ex. 1 § 3.1.1(a).) Applying for the Link Entitlement is a separate application process that a developer must complete in addition to the ordinary process for submitting an app for review by Apple. (See Dkt. 874 Ex. 3.) Apple reserves the right, in its “sole discretion”, to deny developers’ requests for Link Entitlements. (Dkt. 874 Ex.2 § 2.3.)

Link Placement, Messaging and Appearance. Apple dictates every aspect of the placement, messaging and appearance of External Links. Specifically:

- Placement: Developers may **not** place a Link anywhere near a purchase flow, where steering is most relevant. (See Dkt. 874 Ex. 2 § 3.3.)
- Messaging: Developers may only convey to users one of the following five Apple-curated messages:³

Templates

Use the templates that best fits your use case. Aside from the price, percentage off, and your website URL, the language used in your app must match the template language. Don’t modify or use the template in a manner that misleads customers.

³ Dkt. 874 Ex. 3 (Apple-permitted “Templates”). While Apple describes these templates as having seven different messages, there are in reality only five templates, two of which have alternate wording for the singular and the plural, depending on how many offers or products are available on the developer’s website.

Purchase template:

Purchase from the website at www.example.com ↗

Special offer template:

For special offers, go to www.example.com ↗

For a special offer, go to www.example.com ↗

Lower price template:

Lower prices offered on www.example.com ↗

Lower price offered on www.example.com ↗

Percent off template:

To get XX% off, go to www.example.com ↗

Specific price template:

Buy for \$X.XX at www.example.com ↗

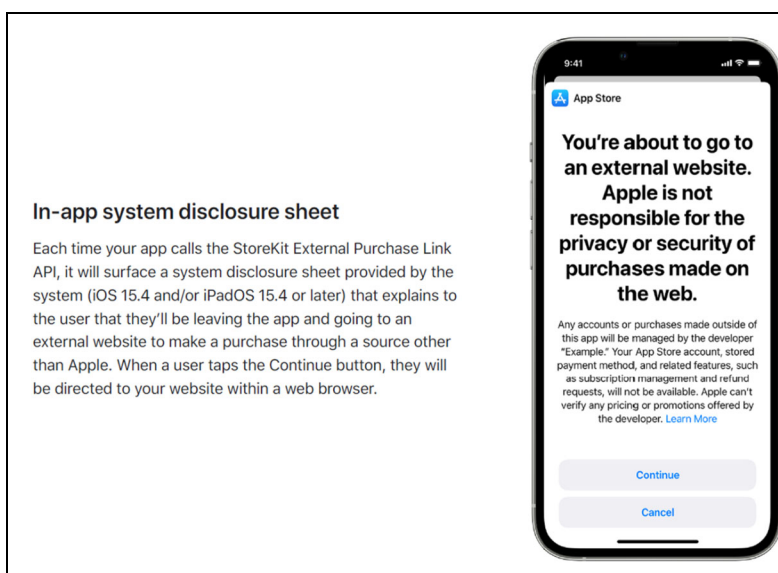
- Appearance: Developers may only include an External Link that follows Apple’s “Plain Button Style”—**which is not a button at all**—as depicted below (permitted style in green enclosure):⁴



⁴ *Buttons*, APPLE DEVELOPER BLOG (last visited Mar. 12, 2023), <https://developer.apple.com/design/human-interface-guidelines/buttons#Platform-considerations> (Apple’s “button styles”).

Collectively, these requirements prevent developers from designing their External Links in a way that is effective in directing customers to cheaper, convenient purchasing alternatives. (Simon Decl. ¶¶ 28, 29.)

Scare Screen. Developers are required to display a scare screen to every user that clicks on an External Link, warning the user against the use of non-Apple purchasing alternatives:⁵



This scare screen is intended to dissuade users from completing purchases on the web, and is required even if the alternative payment processor on the linked website is just as secure, or even more secure, than Apple's IAP. (Simon Decl. ¶ 30; Owens Decl. ¶ 31.)

⁵ Dkt. 874 Ex. 3 (Apple's "In-app system disclosure sheet").

URL Restrictions. External Links must link to a single website URL, with no query parameters. This means that the Link may not (a) transfer the user’s login credentials or (b) land the user on the page of the product they were browsing in the app. Users who follow the Link must navigate anew on the web page to find the purchase they want to make, and may also need to sign in again to make the purchase. This will result in a frustrating experience that users may abandon before completing a purchase (Owens Decl. ¶ 29) or may lead to users purchasing products for the wrong accounts (Simon Decl. ¶ 31). Furthermore, developers can only list a single website URL, and that URL cannot be changed without resubmitting the External Link to Apple. (Dkt. 874 Ex. 2 § 3.3; Dkt. 874 Ex. 3.) Accordingly, developers cannot engage in the hallmarks of price competition—promotions, frequent changes to prices, etc.

2. Apple’s Continued Prohibition on Calls to Action Other than External Links

Apple’s Notice of Compliance states that Apple now permits steering through “buttons”. (Dkt. 871 at 1, 4, 5, 13.) But as noted above and as depicted in the above figure, the new Guidelines do not actually allow buttons, such as the buttons that fitness app developer Down Dog previously included—with great success—in the Android versions of its apps. (See Simon Decl. ¶¶ 15-27.)

Further, Apple continues to prohibit developers from simply telling users, without a Link, that other purchasing options are available. In other words, simple truthful statements like “Items available on our website at a discount” or “Go to [www.website.com] for lower prices” remain

prohibited. The Notice states that Apple now permits “links ***with*** calls to action”. (Dkt. 871 at 1, 4, 5, 13 (emphasis added).) But the Court’s Injunction enjoins Apple from prohibiting steering through “links[] ***or other calls to action***”. (Dkt. 813 ¶ 1 (emphasis added).) As Apple has confirmed in meet and confers with Epic, Apple still does not allow any “other calls to action” that are untethered to an External Link. (Even Decl. Ex. 3 at 3.)

3. Apple’s Continued Prohibition on Encouraging Users To Use Purchasing Methods Other than IAP

New Guideline 3.1.3 still prohibits developers of certain types of apps from, within the app, “encourag[ing] users to use a purchasing method other than in-app purchase”.⁶ (Dkt. 874 Ex. 1 at 21.) This language suggests that the apps covered in Guideline 3.1.3 are prohibited from using an External Link because doing so would “encourage” users to use a purchasing method other than IAP. Among the apps covered by Guideline 3.1.3 are “Multiplatform Services”, broadly defined by Apple as all “[a]pps that operate across multiple platforms [and] allow users to access content, subscriptions or features they have acquired . . . on other platforms or [the developer’s] website, **including consumable items in multi-**

⁶ This prohibition in Guideline 3.1.3 covers purchase methods for Multiplatform Services, Enterprise Services, Person-to-Person Services, Goods and Services Outside of the App, Free Stand-alone Apps and Advertising Management Apps. The Guideline recognizes a single exception, stating that “encouragement” of the use of other purchasing alternatives is allowed “as set forth in 3.1.3(a)”. Guideline 3.1.3(a) covers only Reader Apps, which are expressly allowed to use External Links (though not buttons or other calls to action).

platform games". (Dkt. 874 Ex. 1 § 3.1.3(b) (emphasis added).) This definition covers many of the most popular game apps on iOS, such as Minecraft, Candy Crush, Hearthstone, Roblox, PUBG Mobile and Call of Duty: Mobile. (See Dkt. 779-1 ¶¶ 165, 514.)⁷

Epic raised this issue with Apple during meet and confers, and Apple stated that Multiplatform Services *may*, in fact, obtain an entitlement for External Links (so long as they meet all of the other requirements). (Even Decl. Ex. A at 2, 3.) Epic asked Apple to amend its Guidelines consistent with this representation. (*Id.* Ex. A at 3.) On March 5, 2024, Apple published amended Guidelines (the "Amended Guidelines"). (See *id.* Ex. B.) However, the Amended Guidelines do not modify Section 3.1.3. The only relevant change was to hyperlink the language "in-app purchases within the app" in Section 3.1.3(b) to Section 3.1.1. (Compare Dkt. 874 Ex. 1 § 3.1.3(b) (the phrase "in-app purchases within the app" appears as plain text) *with* Even Decl. Ex. B § 3.1.3(b) (the phrase "in-app purchases within the app" appears as an internal link, which takes the user back to Section 3.1.1).) The changed text is highlighted in the below depiction of Section 3.1.3(b) of the Amended Guidelines:⁸

3.1.3(b) Multiplatform Services: Apps that operate across multiple platforms may allow users to access content, subscriptions, or features
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⁷ The Fortnite iOS app would also fall into this category if it were allowed on the Apple App Store.

⁸ Even Decl. Ex. B § 3.1.3(b) (Section 3.1.3(b) of the Amended Guidelines, with highlighting added to language appearing as a link instead of plain text).

they have acquired in your app on other platforms or your web site, including consumable items in multi-platform games, provided those items are also available as in-app purchases within the app.

The Amended Guidelines retain the language in Section 3.1.3 prohibiting developers of covered apps from “encourag[ing] users to use a purchasing method other than in-app purchase” and, aside from the hyperlink, otherwise leave Section 3.1.3(b) unchanged. The Amended Guidelines also make no changes to the other subsections of Section 3.1.3 to clarify whether apps covered in those subsections can also qualify for an External Link.⁹ Apple has not otherwise explained during meet and confers how the availability of the External Link entitlement for apps covered by Guideline 3.1.3(b) is consistent with the prohibition on encouraging the use of purchasing methods other than IAP. (Even Decl. Ex. A.)¹⁰

⁹ While certain of the app types covered in Section 3.1.3 may not need to use an External Link because they are not required to use IAP to process in-app purchases (*e.g.*, apps selling physical goods and services, covered in Section 3.1.3(e)), other app types likely would benefit from External Links because they are still required to use IAP for in-app purchases (*e.g.*, Enterprise Services, covered in Section 3.1.3(c)).

¹⁰ A March 5, 2024 post on Apple’s website provides the following description of the change to Section 3.1.3(b) in the Amended Guidelines: “3.1.3(b): Added a link to 3.1.1 to make clear that 3.1.1(a) applies, and multiplatform services apps can use the 3.1.1(a) entitlement.” *Updated App Review Guidelines now available*, APPLE.COM (March 5, 2024), <https://developer.apple.com/news/?id=flmb6ri3>. However, this note is not included in the Guidelines themselves, such that a developer would not receive this clarification if they reviewed

D. Industry and Third-Party Reactions to the Notice of Compliance

Since Apple filed its Notice of Compliance, other developers and industry participants have decried the onerous restrictions in Apple’s compliance plan and its effect on the free exchange of price information. App developer Spotify stated that Apple’s response to the Injunction “is outrageous and flies in the face of the court’s efforts to enable greater competition and user choice”¹¹ and that “[o]nce again, Apple has demonstrated that they will stop at nothing to protect the profits they exact on the backs of developers and consumers under their app store monopoly”.¹² App developer Paul Haddad, founder of Tapbots, which develops apps such as Tweetbot, Pastebot and Calcbot, called Apple’s new policies “downright insulting”.¹³ App developer Nick Farina, co-founder of payment app Kuto, described Apple’s new commission on linked purchases as a “farce” and that

only the Guidelines to understand their rights and obligations. Developers cannot be expected to scroll back through old news posts to find this statement, which is inconsistent with the plain meaning of the Guidelines themselves.

¹¹ Sarah E. Needleman and Aaron Tilley, *Apple Changes Its App Store Policy: Critics Call the Moves ‘Outrageous’*, WALL STREET J. (Jan. 17, 2024), <https://www.wsj.com/tech/apple-changes-its-app-store-policy-critics-call-the-moves-outrageous-7c023e0c>

¹² Tom Gerken, *Spotify attacks Apple’s ‘outrageous’ 27% commission*, BBC NEWS (Jan. 18, 2024), <https://www.bbc.com/news/technology-68018618>

¹³ Christopher Mins, *The Main Driver of Apple’s Success Has Become Its Biggest Liability*, WALL STREET J. (Jan. 26, 2024), <https://www.wsj.com/tech/personal-tech/apple-vision-pro-walled-garden-mac-iphone-app-store-c4838278>

Apple’s new policies regarding External Links “will be used by no one” because “[p]rocessing your own payments will cost you at least 3 percent (as Apple well knows), so you’re back to giving them 30 percent, plus doing a bunch of dev work and special recordkeeping, then reporting to them on your own dime”.¹⁴ Developer David Heinemeier Hansson, the creator of Ruby on Rails, similarly commented that Apple’s new steering commission is going to “poison the one victory Epic secured in their lawsuit so bad nobody would ever think to use it”.¹⁵

Other developers’ and industry participants’ perspectives are likewise that Apple’s policies will not allow for effective steering to payment mechanisms other than IAP. Benjamin Simon, President and CEO of fitness app developer Down Dog, explains that Apple’s policies will not allow the use of in-app buttons similar to those Down Dog previously included in the Android versions of its apps. (Simon Decl. ¶¶ 15-33.) These buttons were highly effective in enabling users to save money by purchasing subscriptions on Down Dog’s website rather than through Google’s in-app billing solution. (*Id.* ¶¶ 21-24.) Mr. Simon explains that Apple’s new fee on Linked Purchases is prohibitive to implementing External Links, because the 3% difference between the fees Apple charges for IAP and those it now imposes on Linked Purchases will not cover the cost of a payment solution on Down Dog’s website, which

¹⁴ Emma Roth, *Apple thought it dealt with Epic v. Apple—has it really?*, THE VERGE (Jan. 24, 2024), <https://www.theverge.com/24049014/apple-epic-court-ruling-developer-tax>.

¹⁵ *Id.*

ranges from approximately 3.5% to 6.5% of the transaction price. (*Id.* ¶ 32.) Christian Owens, founder and executive chairman of payment solution provider Paddle, explains why developers will be unlikely to use External Links because of the added friction they introduce. (Owens Decl. ¶¶ 27-31, 34, 35.) And, even if users were willing to overcome the frictions associated with Linked Purchases, they still would not benefit from lower prices. Paddle’s own costs for its services exceed the 3% differential between Apple’s existing IAP fee and its new fee for Linked Purchases, meaning that Paddle would have to charge developers more than 3%—and as a result developers would have to pay *more* in fees for a Linked Purchase completed through Paddle’s payment solution than they would for a purchase made within their app using IAP. (*Id.* ¶¶ 32-35.)

LEGAL STANDARDS

This Court retains jurisdiction to enforce the Injunction. Specifically, the Court has broad powers to hold Apple in contempt, enforce the Injunction and clarify its application. *Craters & Freighters v. Daisychain Enters.*, 2014 WL 2153924, at *1 (N.D. Cal. May 22, 2014) (the Court “has the inherent authority to enforce compliance with its orders through a civil contempt proceeding”).

“[T]he party alleging civil contempt must demonstrate by clear and convincing evidence that (1) the contemnor violated a court order, (2) the noncompliance was more than technical or de minimis, and (3) the contemnor’s conduct was not the product of a good faith or reasonable interpretation of the violated order.” *Facebook, Inc. v. Power Ventures, Inc.*, 2017 WL 3394754, at *8 (N.D. Cal. Aug. 8, 2017)

(citing *United States v. Bright*, 596 F.3d 683, 694 (9th Cir. 2010)). The contempt “need not be willful, and there is no good faith exception to the requirement of obedience to a court order”. *In re Dual-Deck Video Cassette Recorder Antitrust Litig.*, 10 F.3d 693, 695 (9th Cir. 1993) (quotation omitted). In determining what sanction to impose for civil contempt, a court “should weigh all the evidence properly before it determines whether or not there is actually a present ability to obey and whether failure to do so constitutes deliberate defiance or willful disobedience which a coercive sanction will break”. *Falstaff Brewing Corp. v. Miller Brewing Co.*, 702 F.2d 770, 781 n.6 (9th Cir. 1983). The court must “consider the character and magnitude of the harm threatened by continued contumacy, and the probable effectiveness of any suggested sanction” in bringing about the result desired. *Gen. Signal Corp. v. Donallco, Inc.*, 787 F.2d 1376, 1380 (9th Cir. 1986) (quotation omitted).

Separately from civil contempt, courts may also find that a defendant is violating an injunction when the plaintiff brings the defendant’s conduct to the court’s attention through a motion to enforce. In so doing, the court need not find the defendant in civil contempt in order to find that the defendant has violated the injunction and to enter appropriate relief. See *ADT Security Servs., Inc. v. Security One Int’l, Inc.*, Case No. 11-cv-05149-YGR (N.D. Cal.), ECF No. 185 (order denying motion for civil contempt but modifying preliminary injunction); *Buono v. Norton*, 364 F. Supp. 2d 1175 (C.D. Cal. 2005) (granting “motion to enforce” after finding defendant’s conduct violated injunction, without finding defendant in civil contempt).

“In deciding whether an injunction has been violated it is proper to observe the objects for which the relief was granted and to find a breach of the decree in a violation of the spirit of the injunction, even though its strict letter may not have been disregarded.” *Inst. of Cetacean Rsch. v. Sea Shepherd Conservation Soc’y*, 774 F.3d 935, 949 (9th Cir. 2014).

ARGUMENT

I. Apple’s Updated Policies with Respect to External Links Violate the Injunction

Apple’s policies negate price competition between in-app purchases and out-of-app purchases by burdening out-of-app Linked Purchases with the same exorbitant fees it imposes on in-app purchases—fees that this Court identified as “supracompetitive” and “untethered to [Apple’s] intellectual property”. (Dkt. 830 at 2.) Those fees—which are up to 27% on purchases made within seven days of users clicking an External Link—alone frustrate the purpose of the Injunction. Further, the web of technical requirements, economic hurdles and user frictions imposed through Apple’s new policies mean that the External Links Apple now allows can never be an effective tool to disseminate competitive pricing information as contemplated by the Injunction. Because Apple’s fees and restrictions eliminate developers’ ability to use External Links to offer lower prices to users, Apple’s new policies are a *de facto* prohibition on External Links.

This Court found that Apple’s fee on purchases processed by IAP has never been justified and is not restrained by competition. (Dkt. 812 at 163.) This Court’s Injunction required Apple to allow developers to steer consumers from IAP, which was encumbered

by Apple's tax of up to 30%, to alternative platforms where purchases were unencumbered by Apple's tax. While this Court allowed Apple to continue requiring IAP for in-app purchases, it entered the Injunction so that competition from unencumbered web purchases could "driv[e] the commission rate" (*id.*) and require Apple to compete on the merits with outside payment options (Dkt. 830 at 4). Allowing Apple to charge *any* fee for these alternative purchasing mechanisms interferes with those goals because it gives Apple complete control over the price of the competitive alternative to IAP. By imposing high fees that are not materially different from the fees it charges through IAP, Apple increases the cost of out-of-app purchases and negates the competitive pressure on IAP that the Injunction is intended to introduce.

As noted above, the new fee is only 3% lower than the fee Apple charges developers for in-app purchases using IAP, and the cost to developers of an alternative payment solution would typically meaningfully exceed 3%, resulting in Linked Purchases being more costly to the developer, and in turn, consumers, than in-app purchases using IAP.¹⁶ Further, acquiring and maintaining a Link Entitlement adds costs to developers, including that developers must maintain various specified data on Linked Purchases, report that data to Apple and possibly submit to an audit by

¹⁶ For example, Paddle charges developers a fee of up to 10% for its payment solution (Owens Decl. ¶ 18, 26), and in Epic's lawsuit against Google, internal Google documents and trial testimony established that the average cost for processing payments is between 4%-6% (*see* Trial Exhibit 360, *Epic Games, Inc. v. Google LLC*, No. 21-md-2981-JD (N.D. Cal.), ECF No. 886-30 at 24; Trial Tr. at 726:19-22, *Epic Games, Inc. v. Google LLC*, No. 21-md-2981-JD (N.D. Cal.)), ECF No. 837.

Apple. Simply put, instead of the Injunction resulting in competitive pressure that would force Apple to make IAP *cheaper*, Apple is using the Court-mandated links to make alternative purchasing avenues *more expensive*. Make no mistake: this is intentional. Apple knows that under this scheme developers have no real incentive to, and will not, make use of External Links. And as noted above, this financial impact is exacerbated by Apple's decision to impose the fee on all purchases made within seven days of a user clicking a Link—***even if the purchase was made in a different browser window, or even on a different device, and for reasons unrelated to the External Link.***

In addition to the new fees, Apple has imposed further restrictions on External Links that ensure they will not be effective (and will not be used). Together with the fees, these restrictions operate as a *de facto* prohibition on steering that this Court ordered Apple to permit. *First*, Apple's Link Entitlement review process puts a developer's ability to make price competition available to users squarely within Apple's discretion and control.

Second, Apple's design restrictions completely defang External Links as an effective marketing tool for alternative purchasing options. Apple designed External Links to be bland, inconspicuous and removed from the purchase flow in which the link would be meaningful to users. Apple's design of External Links is not intended to *promote* price competition; it is intended to *stifle* it.

Third, if users do somehow locate and click an External Link, Apple's mandatory scare screen will deter them from following through on their chosen out-of-app purchase. Apple claims the scare screen is

necessary to make clear to users that their purchase will not be handled by Apple. But that excuse rings hollow in light of the lack of any similar warning when a user utilizes an iOS app to purchase *physical* goods or services—a purchase handled by entities other than Apple. Indeed, Apple does not present users with *any* warning before they make purchases in the iOS Amazon or Uber app, even though none of these purchases are handled by Apple. In fact, this Court already considered and largely rejected Apple’s arguments at trial that mandating the use of IAP for in-app purchases of digital goods and services increased security. (See Dkt. 812 at 116-17 (finding Apple’s security justifications “cut both ways” and noting in particular that Apple itself did not verify digital goods transactions, and thus “Apple ha[d] not shown how [its] process is any different than other payment processors, and any potential for fraud prevention [wa]s not put into practice”).)

Fourth, any user that makes it past the scare screen will be linked to a generic page of the developer’s website. To complete a purchase, the user would need to again (a) log into their account (even though they were already logged into their account in the app), and (b) search for the product they wanted to purchase. These frictions will further deter users from completing a purchase on the developer’s website if they even make it this far into the purchase flow.

Apple’s *de facto* prohibition on External Links is a violation of the Injunction because it is clearly intended to subvert the purpose of the Injunction: enabling external purchasing mechanisms to competitively constrain Apple’s excessive IAP commission. This sort of textbook circumvention of

an injunction is plainly sufficient grounds for finding Apple in contempt. See *Inst. of Cetacean Rsch.*, 774 F.3d at 949 (finding conduct violated an injunction where it was against “the spirit of the Injunction, even though its strict letter may not have been disregarded” (quoting *John B. Stetson Co. v. Stephen L. Stetson Co.*, 128 F.2d 981, 983 (2d Cir. 1942)); see generally *Alter Domus, LLC v. Winget*, 2023 WL 4865590, at *6 (E.D. Mich. July 31, 2023) (collecting cases and noting that “[i]t has been said that a defendant that hews to the narrow letter of the injunction while simultaneously ignoring its spirit charts such a course at its own peril” (quotation marks, citations and alterations omitted)); *F.V. v. Jeppesen*, 466 F. Supp. 3d 1110, 1116 (D. Idaho 2020) (noting that “[t]he scope of an injunction is discerned from the language of the injunction itself, as well as from the objective of the relief granted therein” and that “[p]arties are expected to comply with both the letter and the spirit of a court’s order”).

Cetacean is illustrative. There, a conservation group defendant was enjoined from “physically attacking any vessel engaged by [p]laintiffs”, an operator of whaling ships. The defendant transferred certain assets to a foreign entity it knew was likely to use those assets to attack the plaintiffs’ vessels. 774 F.3d at 941. The Ninth Circuit held that this conduct violated the injunction by “giving others [the defendant] knew were highly likely to violate the injunction the means to do so”. *Id.* at 949. The court further found that a finding of contempt was appropriate because, despite ample opportunity, the defendants “did not seek clarification of their obligations” under the injunction before acting. *Id.* at 954. The court also warned that “[t]he schemes

available to those determined to evade injunctions are many and varied, and no injunction can explicitly prohibit every conceivable plan designed to defeat it”. *Id.* (citations omitted).

Similarly, in *Zest Anchors, LLC v. Geryon Ventures, LLC*, the district court issued a preliminary injunction prohibiting the defendant from selling certain products, among other actions. 2022 WL 16838806, at *1 (S.D. Cal. Nov. 9, 2022). After the injunction was issued, the defendants stopped selling one of the finished products at issue but continued to sell components used to make that product. *Id.* The court found that the defendants’ behavior constituted a violation of the injunction and held the defendants in civil contempt, noting that the “[d]efendants’ reading of the Preliminary Injunction and continued sales of their [individual component parts] constitutes an impermissible end-run around the Preliminary Injunction because even though [the d]efendants sell non-infringing, individual components to foreign distributors, they know that these parts will be combined into an infringing whole for sale to customers in the United States”. *Id.* at *2.

As with the defendants in *Cetacean* and *Zest Anchors*, Apple is determined to circumvent the Injunction. Its conduct violates the Injunction by introducing a new fee on purchases made outside the app set at effectively the same supracompetitive price that the Injunction was designed to constrain. As a result, Linked Purchases will not be any cheaper than IAP. While the Court did not explicitly prohibit this scheme, it goes against the purpose of the Injunction, which was to open up Apple’s service fees to competition. Similarly, Apple’s conduct violates the Injunction by creating a *de facto* prohibition on one of

the three steering mechanisms that this Court explicitly required Apple to permit. As discussed in Section A above, the Court was clear that the purpose of the Injunction was to allow competition to finally restrain the fee Apple charges for purchases processed through IAP by increasing the free exchange of “pricing information on mobile devices and bringing transparency to the marketplace”. (Dkt. 812 at 166.) Far from complying with the Injunction in good faith, Apple has introduced effectively the same fee for External Links and otherwise erected so many barriers and imposed so many costs on developers who seek to use External Links that no developer actually will. That is a violation of the Injunction.¹⁷

¹⁷ Apple’s deliberate efforts to frustrate the purposes of laws and rulings intended to open up the iOS ecosystem to competition do not end with its response to this Court’s Injunction. Apple recently announced that, pursuant to the European Union’s Digital Markets Act—a new law intended to open up app distribution and payment solutions to competition in European markets—it would allow competing app stores on iOS in Europe, but would impose new fees on any download of such stores and on downloads of apps *from* such stores. Moreover, a European Epic subsidiary, Epic Games Sweden AB, applied and was approved for a developer account with the stated intent of developing the Epic Games Store and Fortnite for iOS in European markets. On March 2, 2024, Apple terminated Epic Games Sweden’s account, citing Epic’s public statements disagreeing with Apple’s DMA compliance plan and the new fees Apple imposed. Apple reinstated the account only after the European Commission announced it was investigating Apple’s conduct. See *UPDATE: Apple Reinstates Epic Developer Account After Public Backlash for Retaliation*, EPICGAMES.COM (Mar. 8, 2024), <https://www.epicgames.com/site/en-US/news/apple-terminated-epic-s-developer-account>.

Apple’s restrictions cannot be justified by security, privacy or any rationale other than the anti-competitive objectives this Court found unlawful in its Rule 52 Order. Indeed, the Court already weighed Apple’s supposed privacy and security concerns against the negative impacts of its anti-steering provisions in determining that those provisions violated the UCL, concluding that “the harm from the anti-steering provisions outweighs its benefits”. (Dkt. 812 at 165-66.) Further, as noted above, Apple imposes none of the frictions discussed above on apps selling physical goods or services, even though those sales are not handled or monitored by Apple in any way. (See Dkt. 871-4 Ex. 11 § 3.1.3(e) (“If your app enables people to purchase physical goods or services that will be consumed outside of the app, you *must* use purchase methods other than in-app purchase to collect those payments” (emphasis added)).) And as Apple itself admits, “developers are already permitted to (and do) include within their apps certain external links, directing customers to websites for support and other services” (Dkt. 871 at 4), and this Court has likewise recognized that “[c]onsumers are quite used to linking from an app to a web browser” (*id.* (quoting Dkt. 830 at 3)). If Apple had legitimate privacy and security concerns, it would have similar restrictions apply to all apps, links and purchasing mechanisms—not just to the type of links that could threaten Apple’s “excessive operating margins”. (See Dkt. 812 at 163.)

Moreover, Apple has not argued, and cannot argue, that some of its restrictions—such as its incredibly particular restrictions on the aesthetic and size of External Links—serve any legitimate purpose other than to hide and disadvantage External Links.

This is especially true with respect to Apple's requirement that External Links not appear within the purchase flow of an app, which Apple's Notice does not even attempt to justify.

II. Apple's General Prohibition on Buttons and Calls to Action Other than External Links Violates the Injunction

Apple's purported compliance plan also violates the letter of the Injunction, which requires Apple to allow developers to include in their apps not only external links, but also "buttons" and "other calls to action". (Dkt. 813 ¶ 1.) Apple's updated policies do not allow either. By continuing to prohibit such in-app steering mechanisms, Apple is in clear violation of the plain text of the Injunction.

As noted in Section C.2 above, Apple's updated policies do not allow in-app "buttons" to direct users to purchasing mechanisms other than IAP. Instead, Apple's Guidelines and other materials refer repeatedly only to a "Link Entitlement". The content, style and appearance limitations Apple places on these links mean that a developer cannot actually include a "button" in their app.

Apple's updated policies also continue to prohibit "calls to action" other than External Links. A developer is prohibited from informing users about the ability to purchase a digital good or service on the developer's website except by using one of Apple's "templates" in conjunction with an External Link. (*Supra* Section C.1.) In other words, a developer who otherwise qualifies for a Link Entitlement can include a link in their app that states "To get 30% off, go to [*link to website*]", but that same developer is prohibited from simply including in their app, without

an accompanying link, a message such as: “To get 30% off, go to our website”; “In-App prices are 30% higher due to Apple’s 30% fees”; or “We prefer that you purchase on our website”. Indeed, Apple is continuing to prohibit these “other calls to action” even though Epic has, from the very beginning of this litigation, specifically focused on Apple’s prohibition on “other calls to action” as distinct from buttons or external links. (See Dkt. 1 ¶ 130 (describing, with emphasis in the original, Apple’s policy that “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*”).)

The Injunction is crystal clear. There is no reasonable, good-faith interpretation of the Injunction that allows Apple to continue to ban two of the three in-app steering mechanisms that were expressly identified by the Court. Yet that is exactly what Apple has done, without any justification or explanation. Apple is therefore violating the express terms of the Injunction and should be held in civil contempt for this reason as well. *See Nat’l Abortion Fed’n v. Ctr. for Med. Progress*, 2017 WL 3021024 (N.D. Cal. July 17, 2017), *aff’d*, 2022 WL 3572943 (9th Cir. Aug. 19, 2022) (finding defendant in civil contempt where they violated the express terms of a preliminary injunction and there was “no argument that the short, simple commands of the Preliminary Injunction are vague or ambiguous”).

III. Apple’s Updated Guideline 3.1.3 Impermissibly Prohibits Steering

As noted above, Section 3.1.3 of Apple’s App Store Review Guidelines, as reflected even in the March 5,

2024 Amended Guidelines, prohibits apps covered by that Guideline (except Reader Apps, as noted above) from, “within the app, encourag[ing] users to use a purchasing method other than in-app purchase”. (Even Decl. Ex. B § 3.1.3.) This language plainly and impermissibly prohibits all steering within apps covered by the Guideline. (See Section C.3.) In fact, this Court’s Rule 52 Order specifically identified Guideline 3.1.3 as an illegal anti-steering rule, noting that Apple violated the UCL by “prohibiting apps from . . . ‘*encourag[ing] users to use a purchasing method other than in-app purchase*’”. (Dkt. 812 at 163 & n.635 (emphasis added) (citing PX-2790 § 3.1.3).)

Apple has taken the position that multiplatform games and apps can still qualify for External Links (subject to the myriad requirements discussed above). (See Section C.3.) But this representation is inconsistent with the plain language of the Guidelines.

Apple’s recent amendment to the Guidelines does nothing to cure the issue. The new link from Section 3.1.3(b) to Section 3.1.1 says nothing about the availability of External Links for apps covered by Section 3.1.3(b) and does not change the fact that Section 3.1.3 plainly prohibits developers of apps covered in that Section from encouraging users to use a purchasing method other than IAP. If anything, the fact that Apple issued the Amended Guidelines and accompanying blog post describing the amendment to Section 3.1.3(b) is an admission that the plain language of Section 3.1.3 contravenes the Injunction. Apple’s failure to make any change to the text of that Section, despite this inconsistency between the language and its stated intent, only highlights the problems with Apple’s Guidelines.

Further, Apple’s private assurance to Epic in a meet and confer between counsel that Apple would not enforce the plain language of its own Guidelines does not alleviate the need for enforcement of the Injunction. See *C.F.T.C. v. Saffron*, 2020 WL 495557, at *2 (D. Nev. Jan. 30, 2020) (finding defendants in civil contempt and ordering full compliance with preliminary injunction where defendants had merely “offered excuses and promises” with respect to their violations and future compliance efforts); cf. *S.E.C. v. Fehn*, 97 F.3d 1276, 1296 (9th Cir. 1996) (“[S]incere assurances of an intent to refrain from aiding and abetting future violations are insufficient, without more, to militate against an injunction.”); *OmniGen Rsch., LLC v. Yongqiang Wang*, 2017 WL 5505041, at *20 (D. Or. Nov. 16, 2017) (“A defendant’s voluntary cessation of activity is not a ground for denial of a permanent injunction.”).

Thus, this Court can and should order Apple to further amend its Guidelines to remove this language or to explicitly state that the categories of apps in Guideline 3.1.3 have the same right to use in-app steering mechanisms as do all other apps.¹⁸ Such an order is within the Court’s inherent authority to

¹⁸ The most straightforward manner of clarifying Apple’s policies would be to modify Guideline 3.1.3 so that it simply follows the text of the Injunction. Specifically, Guideline 3.1.3 could be modified to state as follows (with emphasis for modified language): “The following apps may use purchase methods other than in-app purchase. ***Developers can include in their apps and metadata buttons, external links, or other calls to action that direct customers to purchasing mechanisms other than in-app purchase.*** Developers can ***also*** send communications outside of the app to their user base about purchasing methods other than in-app purchase.”

ensure compliance with its Injunction. *See United States v. Rescino*, 2021 WL 4685385, at *3 (N.D. Cal. Oct. 7, 2021) (“A district court has the inherent authority to enforce compliance with its orders through a civil contempt proceeding” (citing *Int’l Union, United Mine Workers of Am. v. Bagwell*, 512 U.S. 821, 827-28 (1994))); *see also Mendoza v. Hyundai Motor Co., Ltd.*, 2024 WL 189014, at *2 (N.D. Cal. Jan. 17, 2024) (“[A] federal court administering a permanent injunction has discretion to clarify or modify an injunction if a party enters upon transactions which raise doubts as to the applicability of the injunction.” (quotation omitted)).

CONCLUSION

For the foregoing reasons, Epic requests the Court enter an order (1) holding Apple in contempt for violating the Court’s Injunction; (2) requiring Apple to promptly bring its policies into compliance with the Injunction; and (3) requiring Apple to remove all anti-steering provisions in Guideline 3.1.3.

Dated:
March 13, 2024

Respectfully submitted,

By: /s/ Gary A. Bornstein

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

EPIC GAMES, INC.,
Plaintiff

vs.

APPLE INC.,
Defendant.

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

**ORDER SETTING
EVIDENTIARY HEARING**

Re: Dkt. No. 897

Pending before the Court is plaintiff Epic Games, Inc.'s request to find defendant Apple, Inc. in civil contempt for failing to abide by this Court's injunction, which requires it to implement certain practice changes relative to in- and out-of-app purchases. Having carefully considered the briefing and for the reasons articulated below, the Court **FINDS** an evidentiary hearing is necessary to explore the factual bases for plaintiff's motion and **SETS** such a hearing, subject to the parameters specified herein. Given the Court's schedule, including a five-defendant three-month trial to begin this June, the hearing shall be held on **Wednesday, May 8, 2024 at 8:30 a.m.** To the extent proceedings have not concluded, they shall resume on **Friday, May 10, 2024 at 12:00 p.m.** and again on **Friday, May 17, 2024 at 8:30 a.m.**

The Court begins by briefly summarizing the procedural history. On September 10, 2021, after a bench trial, the Court ruled that certain anti-steering provisions, such as those in Apple's App Store Review Guidelines (the "Guidelines"), violate the unfairness prong of California Unfair Competition Law ("UCL"),

Cal. Civ. Code § 17200, *et seq.*, because they “hide critical information from consumers” relative to alternate payment methods, thereby “illegally stif[ling] consumer choice.” (Dkt. No. 812 at 3, 162–67.) The Court subsequently crafted and entered a permanent, nationwide injunction requiring Apple to implement practice changes. The injunction survived appeal and remains in force.

On January 16, 2024, Apple filed a notice identifying steps taken to comply with the injunction. (*See generally* Dkt. No. 871.) On March 13, 2024, Epic Games filed the pending motion to enforce the injunction, asserting that, contrary to Apple’s representations, the company’s “new App Store policies continue to impose prohibitions on developers that this Court found unlawful and enjoined.” (Dkt. No. 897, Motion to Enforce the Injunction (“Mot.”) at 6:2–3.) Plaintiff seeks as relief a Court order: (i) holding Apple in civil contempt for violating the injunction; (ii) requiring Apple to promptly bring its policies into compliance; and (ii) requiring Apple to remove all anti-steering provisions in Section 3.1.3 of the Guidelines. Thus, Epic Games requests that this Court invoke its “inherent authority to enforce compliance with its order[] through a civil contempt proceeding.” *Craters & Freighters v. Daisychain Enterprise*, 2014 WL 2153924, at *1 (N.D. Cal. May 22, 2014).

To succeed on such a motion, Epic Games must show, by clear and convincing evidence, that (1) Apple violated the injunction, (2) its violation was “beyond substantial compliance,” and (3) its conduct was “not based on any good faith and reasonable interpretation of the injunction.” *United States v. Bright*, 596 F.3d 683, 694 (9th Cir. 2010) (cleaned up). “[T]he proper

practice,” when a party is alleged, as here, to be in contempt of court, is “to require the [purported] offender to appear and show cause why he should not be punished.” *Cooke v. United States*, 267 U.S. 517, 535 (1925); *see also Int’l Union, United Mine Workers of Am. v. Bagwell*, 512 U.S. 821, 827 (1994) (“[C]ivil contempt sanctions . . . may be imposed in an ordinary civil proceeding upon notice and an opportunity to be heard.”).

Here, Epic Games makes three primary arguments regarding Apple’s alleged non-compliance with the injunction. One, “the web of technical requirements, economic hurdles, and user frictions imposed through Apple’s new policies” serve as “a *de facto* prohibition on [e]xternal [l]inks” in violation of the injunction. (Mot. at 19:26–27; 20:2–3.) Two, Apple’s new commission structure for out-of-app purchases made after a user clicks an external link “alone frustrate[s] the purpose of the [i]njunction.” (Mot. at 19:25–26.) Three, the plain text of Section 3.1.3 of the Guidelines, as further revised by Apple, violates the injunction by prohibiting covered apps from, “within the app, encourag[ing] users to use a purchasing method other than in-app purchase.” (Dkt. No. 874, Notice of Compliance, Corrected Ex. 1, Guidelines § 3.1.3.) Epic Games supports these arguments with screenshots of Apple’s required system disclosure sheet and developer-oriented web pages, as well as by reference to the Guidelines and related addenda, as well as other materials.

Having reviewed these arguments and the supporting documentation relevant thereto, the Court **FINDS** that Epic Games has made a sufficient preliminary showing that, viewed holistically, Apple’s practice changes undermine the spirit of the

injunction by limiting competition, impeding the free flow of information, and constraining user choice. The Court **SETS** an evidentiary hearing to further assess Epic Games' arguments as well as Apple's defenses.

Parties are advised that parameters shall apply to the topics raised at the hearing. Namely, the parties shall provide evidence concerning the following: (i) the external link entitlement program and related requirements, technical or otherwise; (ii) the decision-making process relative to Apple's commission structure for out-of-app purchases and impact of such structure, especially given the payment structure which exists for physical items or other items outside of the app; (iii) Section 3.1.3 of the Guidelines; and (iv) out-of-app communications between developers and users.

The Court anticipates discussion of this process will touch on the Analysis Group report referenced in Alex Roman's sealed declaration. Thus, Apple is **ORDERED** to lodge the report under seal and provide it to opposing counsel by **Friday, April 26, 2024**. Further, Roman **SHALL** attend in person. If for whatever reason Roman is unavailable, the Court will accept a designee in his stead, although such designee must have also been involved in the process of designing the revised commission structure, including the presentation of such structure to the Price Committee, and be familiar with Apple's engagement with the Analysis Group. Ned S. Barnes, who submitted a declaration to which Epic Games refers in their reply, **SHALL** also attend.

The parties shall each file a witness list by noon on **Tuesday, April 30, 2024** with a short description of the anticipated evidence and an exhibit list by **Friday, May 3, 2024**. Electronic copies of exhibits

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shall be exchanged no later than noon on **Saturday,
May 4, 2024.**

IT IS SO ORDERED.

Dated: April 23, 2024 /s/ Yvonne Gonzalez Rogers
YVONNE GONZALEZ ROGERS
UNITED STATES DISTRICT
JUDGE

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

EPIC GAMES, INC.,
Plaintiff and Counter-
Defendant,

v.
APPLE INC.,
Defendant and
Counterclaimant.

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

**ORDER REGARDING
EVIDENTIARY
HEARING AND
SPECIAL MASTER
REVIEW**

The parties are familiar with the background of the immediate dispute. As part of the ongoing evidentiary hearing regarding Apple's compliance with this Court's injunction, the Court ordered Apple to produce all injunction-compliance related documents in May 2025. (Dkt. No. 974.) Apple asserted claims of privilege over a substantial portion of relevant documents, roughly 55,000.¹ Subsequent challenges and rulings against Apple resulted in Apple's re-review and the appointment of review by three special masters. (See Dkt. Nos. 1074, 1081, 1092, 1105.) Last month, the Court tentatively set the evidentiary hearing to resume on February 24, 2025.

Apple has now completed its re-review and production of documents to both the special masters and Epic Games, Inc. ("Epic") and maintains claims of privilege over 23,716 documents. (Dkt. No. 1151 at 5–

¹ Epic represents that Apple initially withheld around 55,000 documents for privilege after producing just under 100,000 documents. Dkt. No. 1151 at 1.

6.) As of January 30, 2025, the special masters had ruled on around 5,500 of those documents, leaving over 18,000 for review. (*Id.* at 2, 6.) The special masters have estimated that it will take them “at a minimum” through February or March to complete their review. (*Id.* at 6.)²

Time is of the essence. While a completed universe of non-privileged, relevant documents would be optimal, the Court recognizes that, should Apple be found to be in violation of the injunction, every day presents further injury to Epic. In supplemental filings, the parties at least appear to agree that the evidentiary hearing should resume on February 24, 2025, although they disagree as to how and whether certain documents should be prioritized in the special master review so they can be ruled on prior to resuming the hearing. (*See* Dkt. Nos. 1162, 1169.)

In light of the parties’ submissions and Magistrate Judge Hixson’s recommendation this past Friday, January 31, 2025, the Court **ORDERS**:

First, assuming the Court is not in trial, the evidentiary hearing will resume on February 24, 2025.

Second, the special master review and production of non-privileged documents to Epic will continue in parallel to the evidentiary hearing. The Court agrees that designating certain documents for prioritized special master review may be conducive to a more productive use of time at the hearing. The Court recognizes that Apple has an inherent advantage here, because Apple knows the contents of every

² Epic notes that the special masters’ current pace suggests their review would not be complete until April at the earliest. Dkt. No. 1151 at 3.

document, while Epic must designate in the dark. Thus, Epic may select 1,000 documents for immediate review by the special masters. The parties may then agree on a selection process for the balance to be conducted equally.

Third, as a stopgap for Apple's advantage created by its own delay, the Court will keep the evidentiary hearing open in the event Epic finds a critical document that requires testimony. All witnesses will not be excused and shall remain under the prior order prohibiting any communication on the issues pending until the Court issues an order to the contrary. The Court will also consider, as the parties' supplemental filings suggest, the filing of any additional documents produced after the hearing date.

Fourth, as set forth in this Court's order dated December 31, 2024 (Dkt. No. 1095), Apple's over-designation of privilege was inconsistent with Ninth Circuit law and was the source of the current delay. Sanctions are warranted. While the Court at this stage declines Epic's invitation to bar Apple's ability to claim any privilege, it believes the dual tracking is the most productive. The Court will consider what sanctions are warranted in the context of a full record and its overall findings.

IT IS SO ORDERED.

Dated: February 4, 2025 /s/ Yvonne Gonzalez Rogers
YVONNE GONZALEZ ROGERS
UNITED STATES DISTRICT
JUDGE

JA-566

[CX-0016]

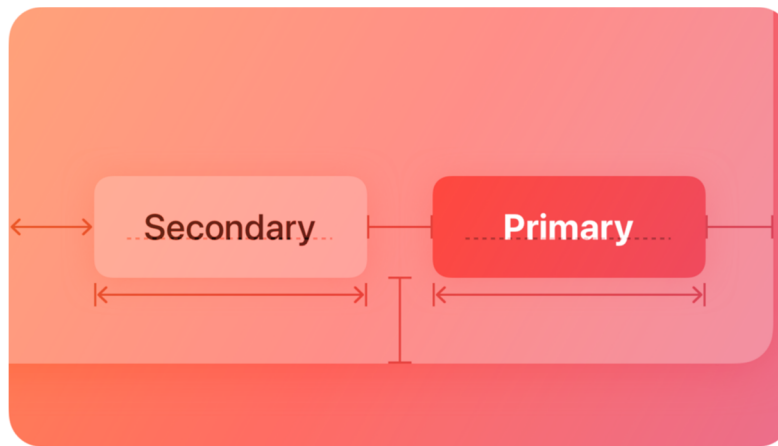
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Buttons | Apple Developer Documentation

Design Overview What's new Guidelines Resources

Buttons

A button initiates an instantaneous action.



Versatile and highly customizable, buttons give people simple, familiar ways to do tasks in your app. In general, a button combines three attributes to clearly communicate its function:

- **Style.** A visual style based on size, color, and shape.
- **Content.** The symbol (or interface icon), text label, or both that a button displays to convey its purpose.
- **Role.** A system-defined role that identifies a button's semantic meaning and can affect its appearance.

In addition to all-purpose buttons, many common button styles — like Info, Close, and Contact Add — perform familiar tasks throughout the system. There are also many button-like components that have distinct appearances and behaviors for specific use cases, like toggles, pop-up buttons, and segmented controls.

Best practices

When buttons are instantly recognizable and easy to understand, an app tends to feel intuitive and well designed.

Make buttons easy for people to use. It's essential to include enough space around a button so that people can visually distinguish it from surrounding components and content. Giving a button enough space is also critical for helping people select or activate it, regardless of the method of input they use. As a general rule, a button needs a hit region of at least 44x44 pt — in visionOS, 60x60 pt — to ensure that people can select it easily, whether they use a fingertip, a pointer, their eyes, or a remote.

Ensure that each button clearly communicates its purpose. A button always includes a text label or a symbol (or interface icon) — and sometimes a combination of both — to help people predict what it does.

Style

System buttons offer a range of styles that support extensive customization while providing built-in interaction states, accessibility support, and appearance adaptation. Different platforms define

different styles that help you communicate hierarchies of actions in your app.

You can configure a system button to use any combination of style and size. By default, a system button uses a size-specific corner radius and your app's accent color. If necessary, you can change these attributes, in addition to attributes that control content layout and the presence of an activity indicator.

In general, use a button that has a visible background for the most likely action in a view. Buttons that have a fill or background shape tend to be the most visually prominent, helping people quickly identify the action they're most likely to want.

Consider keeping the number of visually prominent buttons to one or two per view. Giving people too many prominent buttons increases their cognitive load, requiring them to spend more time considering options before making a choice.

Use style — not size — to visually distinguish the preferred choice among multiple options. When you use buttons of the same size to offer two or more options, you signal that the options form a coherent set of choices. If you want to highlight the preferred or most likely option in a set, use a more prominent button style for that option and a less prominent style for the remaining ones.

Content

Create button content that helps people instantly understand what the button does. Depending on the platform, a button can contain an icon, text, or both.

Note

In macOS and visionsOS, the system displays a tooltip after people hover over a button for a moment. A tooltip displays a brief phrase that explains what a button does; for guidance, see [Offering help](#).

Consider using an icon when a button performs a familiar action that people associate with the icon. For example, people can predict that a button containing the square.and.arrow.up symbol will help them perform share-related activities. If it makes sense to use an icon in your button, consider using an existing or customized [symbol](#).

Consider using text when a short label communicates more clearly than an icon. To use text, write a few words that succinctly describe what the button does. Using [title-style capitalization](#), consider starting the label with a verb to help convey the button's action — for example, a button that lets people add items to their shopping cart might use the label “Add to Cart.”

Role

A system button can have one of the following roles:

- **Normal.** No specific meaning.
- **Primary.** The button is the default button — the button people are most likely to choose.
- **Cancel.** The button cancels the current action.
- **Destructive.** The button performs an action that can result in data destruction.

A button's role can have additional effects on the appearance you configure. For example, the system can use bold text for the label in a primary button, whereas a destructive button uses a red color.

Assign the primary role to the button people are most likely to choose. When a primary button responds to the Return key, it makes it easy for people to quickly confirm their choice. In addition, when the button is in a temporary view — like a sheet, an editable view, or an alert — assigning it the primary role means that the view can automatically close when people press Return.

Don't assign the primary role to a button that performs a destructive action, even if that action is the most likely choice. Because of its visual prominence, people sometimes choose a primary button without reading it first. Help people avoid losing content by assigning the primary role to nondestructive buttons.

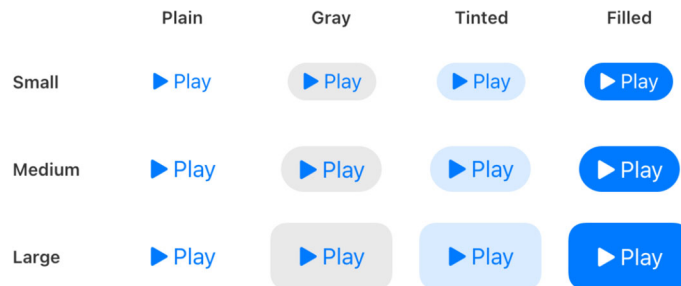
Platform considerations

No additional considerations for tvOS.

iOS, iPadOS

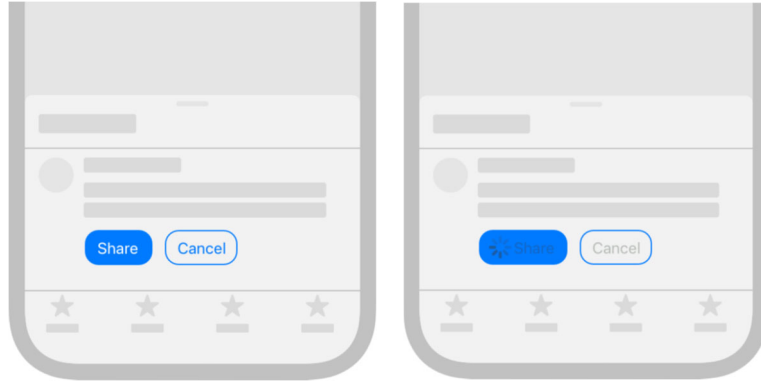
iOS and iPadOS have four button styles, each available in three sizes. Each combination of size and style has a different level of visual prominence.

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Include additional text below the label only if it provides useful details. Additional text uses a smaller text size than the label, showing that the information is secondary to the button's action. For example, you might add text to update an Add to Cart button with the number of items in the cart. Avoid writing a subtitle that explains more about what the button does; make sure a button's containing view, label or image, style, and role provide all the information people need to understand its action.

Configure a button to display an activity indicator when you need to provide feedback about an action that doesn't instantly complete. Displaying an activity indicator within a button can save space in your user interface while clearly communicating the reason for the delay. To help clarify what's happening, you can also configure the button to display a different label alongside the activity indicator. For example, the label "Checkout" could change to "Checking out..." while the activity indicator is visible. When a delay occurs after people click or tap your configured button, the system displays the activity indicator next to the original or alternative label, hiding the button image, if there is one.



macOS

Several specific button types are unique to macOS.

Push buttons

The standard button type in macOS is known as a *push button*. You can configure a push button to display text, a symbol, an interface icon, or an image, or a combination of text and image content. Push buttons can act as the default button in a view and you can tint them.

Use a flexible-height push button only when you need to display tall or variable height content.

Flexible-height buttons support the same configurations as regular push buttons — and they use the same corner radius and content padding — so they look consistent with other buttons in your interface. If you need to present a button that contains two lines of text or a tall icon, use a flexible-height button; otherwise, use a standard push button.

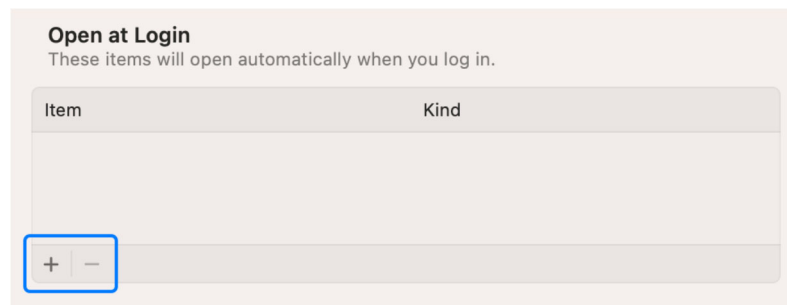
For developer guidance, see [NSButton.BezelStyle.flexiblePush](#).

Append a trailing ellipsis to the title when a push button opens another window, view, or app. Throughout the system, an ellipsis in a control title signals that people can provide additional input. For example, the Edit buttons in the AutoFill pane of Safari Settings include ellipses because they open other views that let people modify autofill values.

Consider supporting spring loading. On systems with a Magic Trackpad, *spring loading* lets people activate a button by dragging selected items over it and force clicking — that is, pressing harder — without dropping the selected items. After force clicking, people can continue dragging the items, possibly to perform additional actions.

Gradient buttons

A gradient button initiates an action related to a view, like adding or removing rows in a table.



Gradient buttons contain symbols or interface icons — not text — and you can configure them to behave like push buttons, toggles, or pop-up buttons. The buttons appear in close proximity to their associated view — usually within or beneath it — so people know which view the buttons affect.

Use gradient buttons in a view, not in the window frame. Gradient buttons aren't intended for use in toolbars or status bars. If you need a button in a [toolbar](#), use a toolbar item.

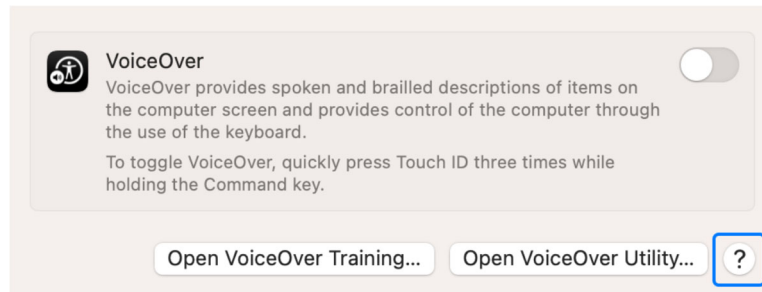
Prefer using a symbol in a gradient button. [SF Symbols](#) provides a wide range of symbols that automatically receive appropriate coloring in their default state and in response to user interaction.

Avoid using labels to introduce gradient buttons. Because gradient buttons are closely connected with a specific view, their purpose is generally clear without the need for descriptive text.

For [developer guidance](#), see [UIButton.BezelStyle.smallSquare](#).

Help buttons

A help button appears within a view and opens app-specific help documentation.



Help buttons are circular, consistently sized buttons that contain a question mark. For guidance on creating help documentation, see [Offering help](#).

Use the system-provided help button to display your help documentation. People are familiar

with the appearance of the standard help button and know that choosing it opens help content.

When possible, open the help topic that's related to the current context. For example, the help button in the Rules pane of Mail settings opens the Mail User Guide to a help topic that explains how to change these settings. If no specific help topic applies directly to the current context, open the top level of your app's help documentation when people choose a help button.

Include no more than one help button per window. Multiple help buttons in the same context make it hard for people to predict the result of clicking one.

Position help buttons where people expect to find them. Use the following locations for guidance.

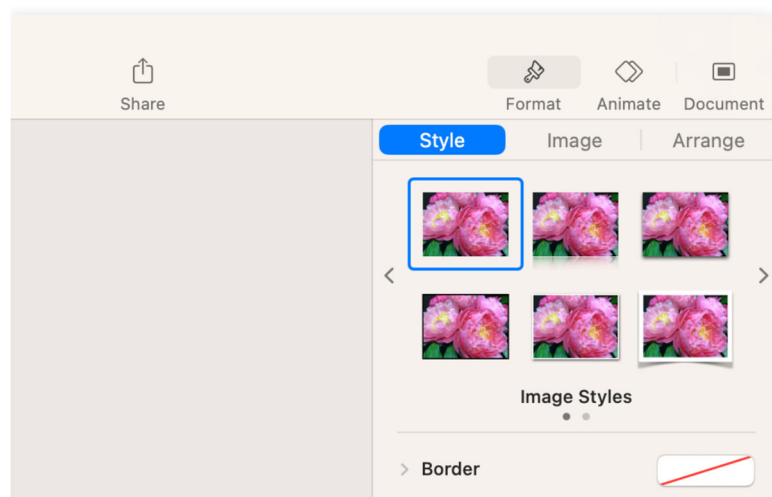
View style	Help button location
Dialog with dismissal buttons (like OK and Cancel)	Lower corner, opposite to the dismissal buttons and vertically aligned with them
Dialog without dismissal buttons	Lower-left or lower-right corner
Settings window or pane	Lower-left or lower-right corner

Use a help button within a view, not in the window frame. For example, avoid placing a help button in a toolbar or status bar.

Avoid displaying text that introduces a help button. People know what a help button does, so they don't need additional descriptive text.

Image buttons

An image button appears in a view and displays an image, symbol, or interface icon. You can configure an image button to behave like a push button, toggle, or pop-up button.



Use an image button in a view, not in the window frame. For example, avoid placing an image button in a toolbar or status bar. If you need to use an image as a button in a toolbar, use a toolbar item. See [Toolbars](#).

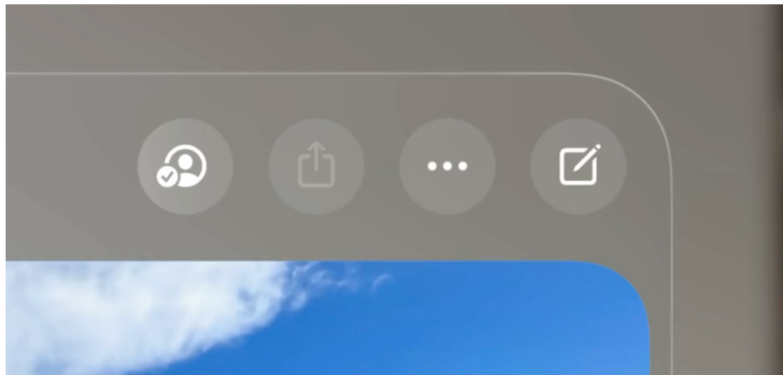
Include about 10 pixels of padding between the edges of the image and the button edges. An image button's edges define its clickable area even

when they aren't visible. Including padding ensures that a click registers correctly even if it's not precisely within the image. In general, avoid including a system-provided border in an image button; for developer guidance, see [is Bordered](#).

If you need to include a label, position it below the image button. For related guidance, see [Labels](#).

visionOS

A visionOS button typically includes a visible background that can help people see it, and the button plays sound to provide feedback when people interact with it.

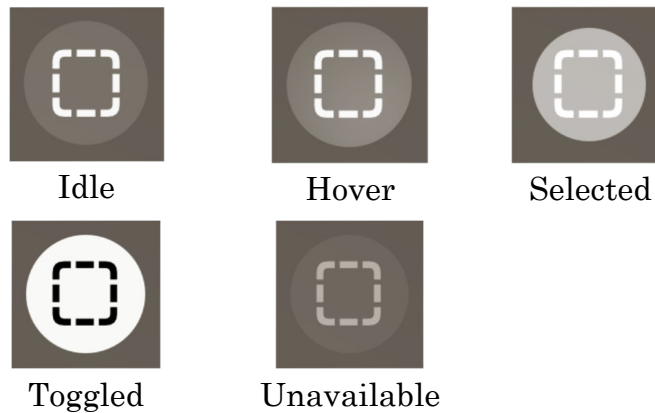


Play ▶

There are three standard button shapes in visionOS. Typically, an icon-only button uses a [circle](#) shape, a text-only button uses a [roundedRectangle](#) or [capsule](#) shape, and a button that includes both an icon and text uses the capsule shape.

JA-578

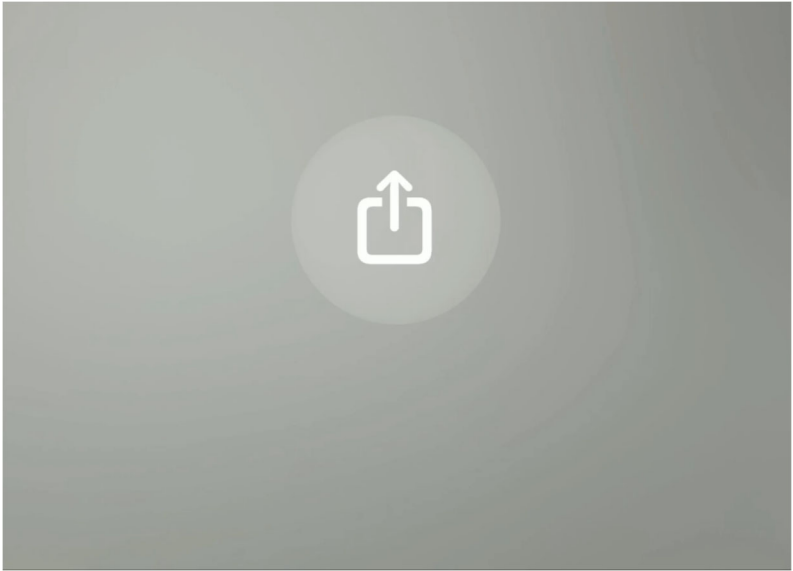
visionOS buttons use different visual styles to communicate five different interaction states.



Note

In visionOS, buttons don't support custom hover effects.

In addition to the five states shown above, a button can also reveal a tooltip when people look at it for a brief time. In general, buttons that contain text don't need to display a tooltip because the button's descriptive label communicates what it does.



Play 

In visionOS, buttons can have the following sizes.

Shape	Mini (28 pt)	Small (32 pt)	Regular (44 pt)	Large (52 pt)	Extra Large (64 pt)
Circular	√	√	√	√	√
Capsule (text only)		√	√	√	
Capsule (text and icon)			√	√	
Rounded rectangle		√	√	√	

Prefer buttons that have a discernible background shape and fill. It tends to be easier for people to see a button when it's enclosed in a shape that uses a contrasting background fill. The exception is a button in a toolbar, context menu, alert, or ornament where the shape and material of the larger component make the button comfortably visible. The following guidelines can help you ensure that a button looks good in different contexts:

- When a button appears on top of a glass window, use the thin material as the button's background.
- When a button appears floating in space, use the glass material for its background.

Avoid creating a custom button that uses a white background fill and black text or icons. The system reserves this visual style to convey the toggled state.

In general, prefer circular or capsule-shape buttons. People's eyes tend to be drawn toward the corners in a shape, making it difficult to keep looking at the shape's center. The more rounded a button's shape, the easier it is for people to look steadily at it. When you need to display a button by itself, prefer a capsule-shape button.

Provide enough space around a button to make it easy for people to look at it. Aim to place buttons so their centers are always at least 60 points apart. If your buttons measure 60 points or larger, add four points of padding around them to keep the hover effect from overlapping. Also, it's usually best to avoid displaying small or mini buttons in a vertical stack or horizontal row.

Choose the right shape if you need to display text-labeled buttons in a stack or row. Specifically, prefer the rounded-rectangle shape in a vertical stack of buttons and prefer the capsule shape in a horizontal row of buttons.

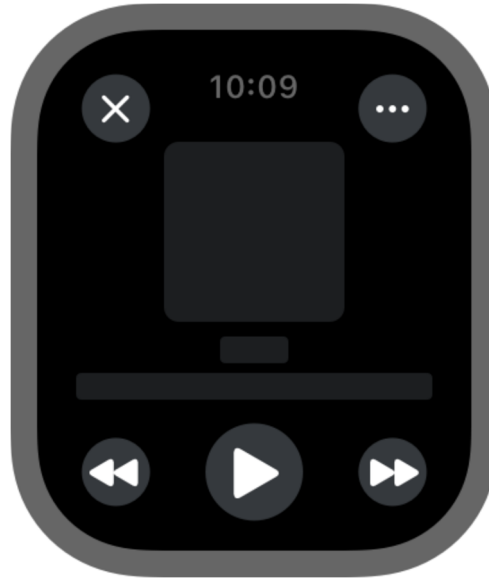
Use standard controls to take advantage of the audible feedback sounds people already know. Audible feedback is especially important in visionOS, because the system doesn't play haptics.

watchOS

watchOS displays all buttons using the capsule button shape. In watchOS 10, the buttons are larger and have material backgrounds that adapt to underlying content to ensure legibility.



Use the toolbar to place buttons in the corners. The system automatically moves the time and title to accommodate toolbar buttons.



Toolbar buttons automatically inherit the app's tint color. Only change the tint color when you need to convey important information, such as when a button performs a destructive action.

Prefer buttons that span the width of the screen for primary actions in your app. Full-width buttons look better and are easier for people to tap. If two buttons must share the same horizontal space, use the same height for both, and use images or short text titles for each button's content.

Use toolbar buttons to provide either navigation to related areas or contextual actions for the view's content. These buttons provide access to additional information or secondary actions for the view's content.

Use the same height for vertical stacks of one- and two-line text buttons. As much as possible, use identical button heights for visual consistency.

Resources

Related

[Pop-up buttons](#)

[Pull-down buttons](#)

[Toggles](#)

[Segmented controls](#)

[Location button](#)

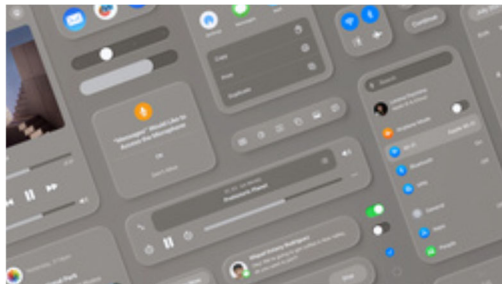
Developer Documentation

[Button](#) — SwiftUI

[UIButton](#) — UIKit

[NSButton](#) — AppKit

Videos



Design for Spatial user interfaces

Supported
platforms



Buttons

Best
practices

Style

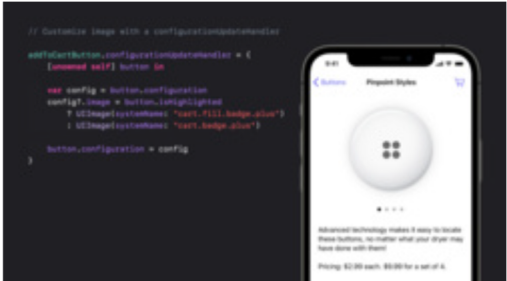
Content

Role

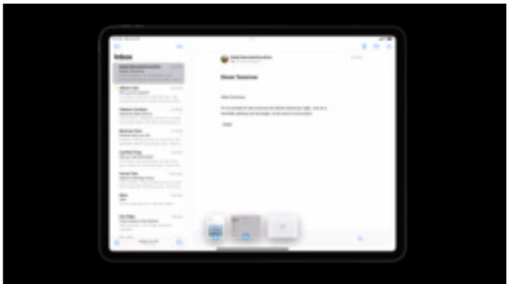
Platform
consider-
ations

Resources

Change log



Meet the UIKit button system



What's new in UIKit

Change log

Date	Changes
February 2, 2024	Noted that visionOS buttons don't support custom hover effects.
December 5, 2023	Clarified some terminology and guidance for buttons in visionOS.
June 21, 2023	Updated to include guidance for visionOS.
June 5, 2023	Updated guidance for using buttons in watchOS.

<https://developer.apple.com/design/human-interface-guidelines/buttons#Platform-considerations>