***Epic Games, Inc. v. Apple Inc.*,**
Case No. 4:20-cv-05640-YGR

Apple Inc.'s Proposed Findings of Fact and Conclusions of Law

TABLE OF CONTENTS

PROPOSED FINDINGS OF FACT 1

I. INTRODUCTION 1

II. APPLE'S VALUES: CUTTING-EDGE TECHNOLOGY, WORLD CLASS DESIGN, AND BRAND-LEVEL COMMITMENT TO PRIVACY 3

III. APPLE LAUNCHES TWO REVOLUTIONARY INNOVATIONS: THE IPHONE AND THE APP STORE 4

A. Apple revolutionizes mobile communication with the introduction of the iPhone. 4

B. Apple did not originally allow third-party developers to build native apps for iOS. 4

C. Apple decides to open the iOS ecosystem to third-party developers. 5

D. Apple spends months creating an SDK for developers that permits access to Apple's valuable intellectual property. 7

E. Apple describes the mechanics and business terms of the App Store. 8

F. In 2009, Apple launches the integrated IAP option for developers to monetize their apps. 10

IV. PRIVACY, SECURITY, DEVICE INTEGRITY, AND OVERALL CUSTOMER EXPERIENCE 12

A. In opening up the iPhone to third-party applications, Apple sought to protect consumers and prioritize their experience. 12

B. To achieve these goals, iOS architecture intentionally diverged from the macOS architecture in material ways. 13

C. Apple built IAP on principles of efficiency, reliability, security, and privacy. 16

V. APPLE'S VALUABLE INTELLECTUAL PROPERTY IS AT THE HEART OF IOS APP DEVELOPMENT AND DISTRIBUTION 17

VI. IN EXCHANGE FOR USING APPLE'S INTELLECTUAL PROPERTY TO DEVELOP AND DISTRIBUTE APPS THROUGH THE APP STORE, DEVELOPERS MUST ABIDE BY THE TERMS OF APPLE'S LICENSE AGREEMENTS 19

A. To develop apps for iOS, developers agree to abide by the terms of the Developer Agreement. 19

B. To distribute iOS apps, developers must sign the Developer Program License Agreement. 20

C. To qualify for distribution through the App Store, iOS apps must comply with the App Store Review Guidelines. 26

D. Apple conducts a robust app review before apps are published. 33

TABLE OF CONTENTS
(continued)

Page

E. Apple continues to protect consumer privacy and security after apps are published..... 36

F. Over time, Google has been tightening its app screening process and moving to a system that is more similar to Apple's. 38

VII. THE APP STORE RESULTED IN SIGNIFICANT IMPROVEMENTS IN APP DISTRIBUTION, INCLUDING GAME APP DISTRIBUTION. 38

A. Before the App Store, distributing video games and other software was expensive and difficult, particularly for small developers. 38

B. The App Store upended the status quo. 39

C. Apple has reduced its commission and the scope of transactions to which it applies. 40

VIII. CONSUMERS AND DEVELOPERS HAVE BENEFITTED FROM APPLE'S CONTINUOUS INVESTMENT AND INNOVATION 42

A. Apple has relentlessly invested in software, hardware, and integration innovations. 42

B. Apple has relentlessly invested in new developer tools, and improvements to existing tools. 45

C. Apple fiercely protects consumer privacy..... 48

D. Apple also continually improves the App Store storefront. 49

IX. THE APP STORE'S BUSINESS MODEL HAS CONTRIBUTED TO THE RAPID PROLIFERATION OF APPS, INCLUDING GAME APPS..... 50

A. The number of game app developers and users has dramatically increased..... 50

B. The number of game apps available on the App Store has dramatically increased. 51

C. The number of game app transactions on the App Store, and amount of revenue generated from those transactions, have dramatically increased..... 52

D. The quality of game apps available on the App Store has improved. 54

X. THE APP STORE COMPETES WITH OTHER PLATFORMS FOR GAME APP TRANSACTIONS..... 55

A. The App Store launched in a marketplace that already contained numerous rivals. 55

B. Competition for game app transactions has become more intense since the App Store's launch..... 56

TABLE OF CONTENTS
(continued)

Page

XI. AFTER MANY YEARS PROFITING FROM ITS RELATIONSHIP WITH APPLE, EPIC FLAGRANTLY BREACHES ITS AGREEMENTS 58

A. Epic's Business Model 58

B. Epic has been an Apple developer for over a decade. 62

C. Epic has benefitted from Apple's support over the years. 64

D. Epic has achieved success with *Fortnite* by using free distribution (and in-game purchasing functionality) to earn more than $700 million across over 100 million iOS accounts 67

E. Epic Games Store is unprofitable and not comparable to the App Store. 68

F. Epic lays the groundwork for Project Liberty in order to revive and reinvigorate its business. 69

G. Epic renews its agreement with Apple, then seeks a side deal. 72

H. Epic carefully prepares to launch a media campaign against Apple. 73

I. Epic briefs its board of directors and puts into place the final pieces of Project Liberty. 75

J. Epic knew its calculated breach would result in the removal of *Fortnite* from the App Store. 75

K. In August 2020, Epic committed an intentional act of sabotage against the App Store. 76

L. As Epic anticipated, Apple removes *Fortnite* from the App Store. 76

M. Epic sues and declares war on Apple. 77

N. Apple terminated Epic's Developer Program account, as well as its Developer Agreement and DPLA with Apple. 77

O. Epic's disregard for its own customers is widely derided. 78

P. Nevertheless, Project Liberty remains ongoing. 78

Q. Epic owes Apple at least [redacted] in unpaid commissions. 79

XII. THE EVIDENCE DEMONSTRATES THAT THE APP STORE IS A TWO-SIDED GAME TRANSACTION PLATFORM 79

A. The App Store facilitates digital transactions. 79

B. The App Store derives substantial value from strong bilateral indirect network effects. 80

C. Apple has adopted pricing strategies, service provision strategies, and rules of behavior to attract both consumers as well as developers and to facilitate productive interactions between them. 81

TABLE OF CONTENTS
(continued)

Page

XIII. THE APP STORE SUPPLIES ONE RELEVANT PRODUCT: GAME APP TRANSACTIONS 82

XIV. THE APP STORE AND OTHER GAME TRANSACTION PLATFORMS ARE SUBSTITUTES 84

A. For developers, game transactions on other transaction platforms are substitutes for game transactions on the App Store. 84

B. For consumers, game transactions on other transaction platforms are substitutes for game transactions on the App Store. 86

C. Apple competes with other game transaction platforms. 89

XV. THE EVIDENCE DOES NOT SUPPORT A SINGLE MARKET IN "iOS APP DISTRIBUTION" 90

XVI. THE EVIDENCE DOES NOT SUPPORT EPIC'S EFFORT TO NARROW THE RELEVANT MARKET TO AN iOS AFTERMARKET 90

A. Apple does not sell a smartphone operating system. 91

B. Game consumers are not locked into any relevant foremarket, whether the device, as Epic alleges, or the operating system, as Dr. Evans argues. 91

C. There is no reliable evidence that Apple's conduct has increased user switching costs and mixing and matching costs, as described by Dr. Athey 93

D. Game developers are not locked into any relevant foremarket, whether the device, as Epic alleges, or the operating system, as Dr. Evans argues. 95

E. Dr. Evans's hypothetical monopolist tests fail to properly account for indirect network effects, invalidating his conclusions about the relevant antitrust product markets. 96

XVII. THE RELEVANT GEOGRAPHIC MARKET IS DOMESTIC 99

A. From the perspective of U.S. consumers, the relevant geographic market is the United States 100

B. From the perspective of developers, the U.S. is a separate market for game app transactions. 100

C. Competitive conditions differ significantly across countries. 101

XVIII. APPLE LACKS MONOPOLY OR MARKET POWER IN A PROPERLY DEFINED GAME APP TRANSACTION MARKET 101

A. Apple's effective and actual commission rate on in-app purchases has decreased, not increased, since the App Store was launched. 101

TABLE OF CONTENTS
(continued)

Page

B. Dr. Evans's and Dr. Cragg's effective commission calculations ignore the vast number free transactions, which, when included, yield an effective commission for game app transactions of 8.1% in 2018-2019. 103

C. Over the same time, output has dramatically increased. 104

D. Apple's commission is consistent with that charged by other game app transaction platforms. 105

E. Epic's attempts to calculate an artificial profit margin for the App Store is flawed. 106

F. Apple's profit margins are not evidence of market power. 107

G. Apple's market share belies market power. 109

H. The relevant game app transaction market is not highly concentrated. 111

I. Existing transaction platform rivals have the ability to expand output. 111

J. Apple is constrained by indirect network effects, which limit a platform's ability to raise overall prices. 112

K. Apple is constrained by alternative options for monetization. 113

L. Developers' countervailing power, including Epic's leverage over platforms, constrains Apple. 114

XIX. THE CONDUCT CHALLENGED BY EPIC IS NOT ANTICOMPETITIVE 115

A. The "technical restrictions" that Epic complains about are genuine product improvements. 115

B. The "contractual restrictions" challenged by Epic do not constitute anticompetitive conduct. 116

C. Like Apple, other games transaction platforms, including Nintendo, Sony, and Microsoft, have "walled gardens." 118

D. Apple has not refused to deal with Epic. 120

E. Epic has abandoned its essential facility claim, which is factually unsupported in any event. 120

XX. APPLE'S CONDUCT DID NOT HAVE AN ANTICOMPETITIVE EFFECT 121

A. The opening of the iPhone platform to third-party developers was procompetitive. 121

B. The success of the App Store business model has benefitted consumers 122

C. The success of the App Store business model has benefitted developers 122

TABLE OF CONTENTS
(continued)

Page

D. Prices are decreasing, not increasing. 124

E. Output is increasing, not decreasing. 125

F. The App Store provides a trusted platform for transactions. 126

XXI. THE APP STORE BUSINESS MODEL IS BUTTRESSED BY OVERWHELMING PROCOMPETITIVE JUSTIFICATIONS. 126

A. Apple's conduct is grounded in its legitimate interest in prioritizing user experience. 126

B. The challenged contractual provisions prevent free-riding on Apple's procompetitive investments and intellectual property. 128

C. The licensing terms in Apple's DPLA are an integral part of a procompetitive intellectual property licensing arrangement. 129

XXII. EPIC'S PROFFERED ALTERNATIVES FOR IOS APP DISTRIBUTION WOULD UNDERMINE APPLE'S BUSINESS MODEL 129

A. Epic's proffered "solutions" are premised on the counterfactual that Apple will provide free access to its intellectual property. 130

B. Epic's proposed relief would compromise the security of the iOS platform. 130

C. Epic's proposed relief would undermine the reliability and quality of the iOS ecosystem and increase Apple's costs. 133

D. Epic's proposed relief would undermine Apple's ability to maintain and enforce consumer privacy protections. 133

E. Apple would have to redesign iOS to permit the "solutions" Epic seeks. 134

XXIII. DR. ATHEY'S "ECONOMIC MIDDLEWARE" APPROACH DOES NOT MAKE SENSE 134

XXIV. IAP IS NOT A SEPARATE PRODUCT BUT RATHER AN INTEGRAL PART OF THE APP STORE. 136

A. IAP is an integrated feature of iOS app distribution. 136

B. No demand exists for IAP that is separate from distribution via the App Store. 137

XXV. EVEN IF IAP WERE A SEPARATE PRODUCT, IT HAS NOT BEEN TIED 137

A. There is no "iOS in-app payment processing" market. 137

B. Apple has no market power in a market that includes all reasonably interchangeable payment processing providers. 138

C. There is no contractual "tie." 139

TABLE OF CONTENTS
(continued)

Page

D. Apple's conduct did not foreclose any significant share of the relevant market. 140

XXVI. THE APP STORE'S IAP REQUIREMENT IS SUPPORTED BY PROCOMPETITIVE JUSTIFICATIONS 140

A. Apple's IAP is integral to Apple's ability to efficiently collect its commission. 140

B. Apple's IAP provides a safe, secure, efficient, and familiar experience for consumers. 141

C. Apple's IAP also benefits developers 142

D. In light of these many benefits, digital transaction platforms commonly require use of their payment solution for digital transactions. 143

XXVII. THERE IS NO EQUALLY EFFICIENT ALTERNATIVE TO IAP 144

TABLE OF CONTENTS
(continued)

Page

PROPOSED CONCLUSIONS OF LAW 146
I. INTRODUCTION 146
II. MARKET DEFINITION (ALL EPIC COUNTS) 148
A. General Principles 148
B. Product Market 150
i. The App Store Is a Two-Sided Transaction Platform 150
ii. The Relevant Product Market Is Digital Game Transactions 152
a. The Relevant Market Includes All Digital Transaction Platforms, Not Just iOS 153
b. The Relevant Market Is Limited to Digital Transactions for Games 159
c. Epic Has Failed to Prove a Single Market for "iOS App Distribution" 161
iii. The App Store Does Not Constitute a Single-Brand Aftermarket 162
a. There Is No Relevant or Cognizable Foremarket 164
b. iOS App Distribution Does Not Constitute a Single-Brand Aftermarket 165
iv. The Hypothetical Monopolist Test Does Not Support Epic's Market Definition 168
a. The Hypothetical Monopolist Test Cannot Apply Here as a Matter of Law 168
b. Even If the Hypothetical Monopolist Test Could Apply, It Is Not Dispositive 173
C. Geographic Market 175
III. EPIC'S SHERMAN ACT CLAIMS 177
A. General Principles 177
i. Epic's Theories of Liability 177
ii. Business Justifications and Procompetitive Effects 179
iii. Causal Antitrust Injury 182
iv. Foreign Trade Antitrust Improvements Act 182
B. Sherman Act Section 2 (Epic Counts 1, 2, and 4) 185
i. Sherman Act Section 2 – Monopoly Maintenance in the "iOS App Distribution Market" (Epic Count 1) 188
a. Apple Lacks Monopoly Power 189
b. Apple Has Not Engaged in Exclusionary Conduct with Respect to App Distribution 194
c. Apple's Conduct with Respect to App Distribution Does Not Have Anticompetitive Effects 202
d. Any Allegedly Anticompetitive Conduct Is "Redeemed" by a Multitude of Procompetitive Business Justifications 205
e. Apple's Procompetitive Justifications Are Not Pretextual 209
f. There Is No Least Restrictive Alternative Requirement 211
ii. Sherman Act Section 2 – Monopoly Maintenance in the "iOS In-App Payment Processing Market" (Epic Count 4) 211
a. Apple Lacks Monopoly Power in the Relevant Market 212

TABLE OF CONTENTS
(continued)

Page

b. Apple Has Not Engaged in Exclusionary Conduct with Respect to IAP 213
c. Apple's Conduct with Respect to IAP Does Not Have Anticompetitive Effects 214
d. Any Allegedly Anticompetitive Conduct Is "Redeemed" by a Multitude of Procompetitive Business Justifications 215
e. Apple's Procompetitive Justifications Are Not Pretextual 219
iii. Sherman Act Section 2 – Essential Facility (Epic Count 2) 220
a. iOS Is Not an Essential Facility Under Any Market Definition 222
b. Epic Has "Access" to iOS 225
c. Epic Has Not Shown That It Is Feasible for Apple to Alter the App Store's Design in the Way Epic Demands 226
d. Epic Lacks Standing to Bring an Essential Facility Claim Based on Its Alleged Market Definition 228
C. Sherman Act Section 1 (Epic Counts 3, 5, and 6) 229
i. Sherman Act Section 1 – Tying (Epic Count 6) 229
a. Legal Principles 230
b. The *Per Se* Rule Is Inapplicable to This Case 232
c. iOS App Distribution and IAP Are Not Separate Products 234
d. The Two "Products" Are Not Tied 238
e. Epic Is Not Coerced into Using IAP 240
f. There Is No Foreclosure of Any Significant Share of the Relevant Market 241
g. The App Store and IAP Are Procompetitive 242
ii. Sherman Act Section 1 – Unreasonable Restraint of Trade in the "iOS App Distribution Market" (Epic Count 3) 243
a. There Is No Concerted Action 243
b. Epic's Claim Fails Under the Rule of Reason 246
iii. Sherman Act Section 1 – Unreasonable Restraint of Trade in the "iOS In-App Payment Processing Market" (Epic Count 5) 251
D. Sherman Act Claims – Defenses 253
i. Failure to Join an Indispensable Party (All Epic Counts) 255
ii. Waiver and Estoppel (Epic Counts 1–6) 257
iii. Limitations on Actions (Epic Counts 1–6) 258
a. Four-Year Limitations Period 259
b. Exceptions to the Four-Year Limitations Period 259
c. Equitable Bar 260
iv. *Noerr-Pennington* Doctrine (All Epic Counts) 262
IV. EPIC'S STATE-LAW CLAIMS 262
A. Cartwright Act (Epic Counts 7–9) 262
i. Epic's Cartwright Act Claims Fail for Lack of Concerted Action 263
ii. Epic's Cartwright Act Tying Claim Must Be Analyzed Under Section 16720 (Epic Count 9) 265
B. California Unfair Competition Law (Epic Count 10) 266
i. Apple's Conduct Is Not Unlawful 267

TABLE OF CONTENTS
(continued)

Page

ii. Apple's Conduct Is Not Unfair 267
C. State-Law Claims – Affirmative Defenses 270
i. Waiver and Estoppel (Epic Counts 7–10) 270
ii. Limitations on Actions (Epic Counts 7–10) 271
V. EPIC'S REMEDIES 271
A. Declaratory Judgment (All Epic Counts) 271
B. Sherman Act / Clayton Act Remedies (Epic Counts 1–6) 272
i. Injunctive Relief Sought by Epic 272
ii. Antitrust Standing and Injury 277
iii. Standards for Equitable Relief 278
a. Epic Has Not Established Irreparable Harm 279
b. Epic Has Adequate Remedies at Law 281
c. The Balance of Hardships Favors Apple 282
d. Epic's Proposed Relief Would Not Further the Public Interest 283
e. Epic's Proposed Equitable Relief Is Barred by the Doctrine of Unclean Hands 284
iv. Epic's Proposed Injunction Is Overbroad 286
C. State-Law Remedies (Epic Counts 7–10) 291
VI. APPLE'S CLAIMS 292
A. Breach of Contract (Apple Count I) 292
B. Breach of Implied Covenant of Good Faith and Fair Dealing (Apple Count II) 294
C. Quasi-Contract / Unjust Enrichment (Apple Count III) 294
D. Indemnification (Apple Count VII) 297
E. Epic's Affirmative Defenses 299
i. Illegality (Apple Counts I, II, and VII) 299
a. Illegality Under Federal Law 299
b. Illegality Under State Law 301
ii. Void as Against Public Policy (Apple Counts I, II, and VII) 302
iii. Unconscionability (Apple Counts I, II, and VII) 303
VII. APPLE'S REMEDIES 305
A. Compensatory Damages (Apple Counts I–II) 305
B. Unjust Enrichment (Apple Count III) 306
C. Declaratory Judgment (Apple Count VI) 307
D. Indemnification (Apple Count VII) 309

REFERENCE TABLE FOR PROPOSED CONCLUSIONS OF LAW

Claim/Issue	Count	Section
Market Definition	All Epic Counts	§ II
Epic's Sherman Act Claims		
Sherman Act Section 2 – Monopoly Maintenance in the "iOS App Distribution Market"	Epic Count 1	§ III.B.i
Sherman Act Section 2 – Monopoly Maintenance in the "iOS In-App Payment Processing Market"	Epic Count 4	§ III.B.ii
Sherman Act Section 2 – Essential Facility	Epic Count 2	§ III.B.iii
Sherman Act Section 1 – Tying	Epic Count 6	§ III.C.i
Sherman Act Section 1 – Unreasonable Restraint of Trade in the "iOS App Distribution Market"	Epic Count 3	§ III.C.ii
Sherman Act Section 1 – Unreasonable Restraint of Trade in the "iOS In-App Payment Processing Market"	Epic Count 5	§ III.C.iii
Affirmative Defenses – Failure to Join an Indispensable Party	All Epic Counts	§ III.D.i
Affirmative Defenses – Waiver and Estoppel	Epic Counts 1–6	§ III.D.ii
Affirmation Defenses – Limitations on Actions	Epic Counts 1–6	§ III.D.iii
Affirmative Defenses – *Noerr-Pennington* Doctrine	All Epic Counts	§ III.D.iv
Epic's State-Law Claims		
Cartwright Act	Epic Counts 7–9	§ IV.A

California Unfair Competition Law	Epic Count 10	§ IV.B
Affirmative Defenses – Waiver and Estoppel	Epic Counts 7–10	§ IV.C.i
Affirmative Defenses – Limitations on Actions	Epic Counts 7–10	§ IV.C.ii
Epic's Remedies		
Declaratory Judgment	All Epic Counts	§ V.A
Sherman Act / Clayton Act Remedies	Epic Counts 1–6	§ V.B
State-Law Remedies	Epic Counts 7–10	§ V.C
Apple's Claims		
Breach of Contract	Apple Count I	§ VI.A
Breach of Implied Covenant of Good Faith and Fair Dealing	Apple Count II	§ VI.B
Quasi-Contract / Unjust Enrichment	Apple Count III	§ VI.C
Indemnification	Apple Count VII	§ VI.D
Affirmative Defenses – Illegality	Apple Counts I, II, and VII	§ VI.E.i
Affirmative Defenses – Void as Against Public Policy	Apple Counts I, II, and VII	§ VI.E.ii
Affirmative Defenses – Unconscionability	Apple Counts I, II, and VII	§ VI.E.iii
Apple's Remedies		
Compensatory Damages	Apple Counts I–II	§ VII.A
Unjust Enrichment	Apple Count III	§ VII.B
Declaratory Judgment	Apple Count VI	§ VII.C
Indemnification	Apple Count VII	§ VII.D

PROPOSED FINDINGS OF FACT

I. INTRODUCTION

1. With the launch of the iPhone in 2007, Apple created the revolutionary and unique iOS ecosystem. Since then, Apple's development, curation, and protection of that ecosystem has benefitted consumers and developers alike. Apple's investment in that ecosystem—billions of dollars spent on innovation and invention of new intellectual property—has created opportunities that never would have existed, and even grown the economy. All the while, Apple has balanced the value of providing third-party developers access to the iOS ecosystem with its relentless focus on the reliability, safety, security and privacy that consumers hold dear.

2. Apple's decision to open its iOS platform to third-party developers has resulted in massive procompetitive benefits. App Store debuted in 2008 with just 500 apps. Since then, output has exploded—with millions of consumers downloading billions of apps created by thousands of developers. At the same time, prices stayed flat or decreased: Apple has charged developers only a $99 annual fee plus a 30% commission on paid apps and in-app purchases of digital content. Many developers and app categories pay a lower commission. And the vast majority of apps are free to download and result in no commission to Apple. The App Store has become an economic engine, generating billions of dollars in revenue for businesses that pay zero commission to Apple.

3. The App Store is a two-sided transaction platform that connects app developers and consumers. In this case brought by a game developer, the relevant transactions are for digital games. The App Store competes with many other digital games transaction platforms, including those available on Android smartphones; Windows, Amazon, and Android tablets; mobile gaming devices such as the Nintendo Switch; game consoles such as Microsoft's Xbox and Sony's PlayStation; and PCs. And a new crop of online game streaming services promises yet more competitive pressure.

4. Epic's flagship game, *Fortnite*, illustrates the competitive landscape. Apple supports "cross-platform" play and cross-platform transactions. The same consumer can make in-app purchases of V-Bucks on her iPhone (through the browser) during a lunch break, and on a console at home in the evening. Apple (unlike some of its competitors) allows "cross-wallet" play, so that in-game purchases—called V-Bucks in *Fortnite*—can be made on one device and used on another. In other words, an iOS user can purchase V-Bucks on a PC and then (prior to *Fortnite*'s removal) use them in *Fortnite* on her iPhone or iPad—with Epic owing not even a penny's commission to Apple.

5. Apple has no monopoly or market power in the relevant product market for game app transactions. And there is no claim that it had any such power when the restrictions at issue were imposed around the launch of the App Store. Developers are free to create apps for any other platform, and can create web apps for iOS users with no restrictions whatsoever. If developers choose to create native iOS apps using Apple's intellectual property—including Software Development Kits ("SDKs") and 150,000 Application Programming

Interfaces ("APIs"), which are protected by patents, copyrights and trademarks—they must agree to the terms of Apple's Developer Program License Agreement ("DPLA"), including distribution through the App Store.

6. Apple has always maintained a "walled garden" approach to the distribution of native iOS apps created using Apple's proprietary software. Using both proprietary technology and human reviewers, Apple reviews every app and app update submitted for distribution through the App Store for functionality and content, as well as for malware and other harmful code. iOS customers know that if they download an app from the App Store, it will work—and it will not steal their data. Apple made this decision based on its years of experience with PCs, including its own macOS operating system, and its belief that the unique role mobile phones and tablets play in people's lives required greater protections to ensure reliability, safety, and privacy.

7. Apple has chosen to monetize the App Store by charging at most a 30% commission on paid apps and in-app purchases of digital content. Competing platforms charge the same or a higher commission. Moreover, as part of the integrated iOS functionality, Apple has developed an API called "In-App Purchase" ("IAP") to provide a secure and reliable mechanism to deliver digital content to customers and receive payment for that content. Among many other benefits, IAP allows Apple to collect its commission and then remit the balance to developers.

8. Apple's policies are set forth transparently in the DPLA and its incorporated App Review Guidelines, and apply to all developers equally. While certain categories of apps (for example, subscription services) or developers (for example, those earning less than $1 million in annual revenue) pay a reduced commission, apps and developers within those categories are treated alike. Developers use IAP to deliver digital content through iOS regardless of what price (including zero) they choose to charge for that content.

9. The restrictions challenged by Epic in this case—a subset of Apple's app distribution and review policies—are contractual terms on the licensed use of Apple's intellectual property. Apple, as the property owner, has chosen to make its property available to others—but only on its own terms. Developers who do not agree with those terms are free to develop web apps, not using Apple's proprietary software and tools, and distribute them directly to iOS users.

10. These policies support their procompetitive purposes. The curation of the App Store allows Apple to optimize the customer experience and protect the security and privacy of users and their data. App review ensures functionality, and protects customers from pornography and malware. Indeed, the iOS ecosystem is widely and correctly recognized as the safest, most secure, and most reliable mobile computing platform in the world. This benefits developers as well, since native iOS apps approved for distribution through the App Store find an established customer base.

11. Epic has benefited handsomely from its contractual relationship with Apple, which goes back to 2010. Epic has used Apple's proprietary SDKs, and thousands of proprietary APIs,

to develop games for iOS users. During the two years that Fortnite was available on the App Store, Epic earned more than $700 million in revenue from iOS customers.

12. Epic objects to paying Apple a 30% commission—even though it pays the same commission to many other platforms on which Epic distributes *Fortnite*. When Apple refused Epic's request for a special deal, Epic included secret code in a Fortnite update and triggered it, using a server-side "hotfix," to allow iOS customers to purchase V-Bucks without paying Apple's commission. This was a breach of the DPLA (as Epic concedes), so Apple terminated Epic's developer privileges and removed Fortnite from the App Store.

13. This was all part of a pre-planned media strategy called "Project Liberty." Epic retained Cravath, Swaine & Moore LLP and a public relations firm in 2019, and this lawsuit is the culmination of that effort. Epic seeks to portray Apple as the "bad guy" so that it can revive flagging interest in *Fortnite*. Yet, ironically, when Epic got kicked off the iOS platform, it told players that they could continue playing on consoles, PCs, and other devices—demonstrating the existence of competition and the absence of monopoly.

14. Apple is not a monopolist in any relevant market. Apple does not have market power over digital game transactions. Whether measured in apps or in-app purchases, output has increased while prices have stayed constant or fallen. The restrictions in Apple's license agreements protect its intellectual property and serve a variety of procompetitive benefits including reliability, security, and privacy. Epic just wants to free-ride on Apple's innovation.

15. There is no antitrust violation on the facts presented here.

II. APPLE'S VALUES: CUTTING-EDGE TECHNOLOGY, WORLD CLASS DESIGN, AND BRAND-LEVEL COMMITMENT TO PRIVACY

16. Apple is committed to certain core principles. Cook TT. Chief among these is designing, building, and then improving world-class technology products. Cook TT.

17. These products are designed not only to "just work" but also be powerful and easy-to-use. Cook TT. Prioritizing the user is key. Cook TT. Apple products are designed to be simple, not complex, and to deliver a seamless, reliable, and intuitive experience. Cook TT.

18. Apple also believes privacy is a human right. Cook TT.

19. To these ends, Apple has long felt that it is important to own and control the primary technologies behind its products. Cook TT. And Apple has continually innovated, creating new and improving upon old hardware and software—often at great expense and risk. Cook TT.

20. These commitments have allowed Apple to establish a reputation for security and reliability; consumers know they can trust that with an Apple product, they will enjoy a safe, convenient experience. Cook TT.

III. APPLE LAUNCHES TWO REVOLUTIONARY INNOVATIONS: THE IPHONE AND THE APP STORE

A. Apple revolutionizes mobile communication with the introduction of the iPhone.

21. Apple "reinvent[ed] the phone" when—after 30 months of development—it released the iPhone in June 2007. DX-4281, at -274; DX-3426; Schiller Trial Testimony ("TT").

22. The iPhone was a new entrant into a market with several established competitors, including Samsung, Nokia, LG, Sony, Blackberry, Motorola, Windows Mobile, and Palm. Schiller TT.

23. But the iPhone was different. It featured a slick design with a multi-touch interface, powerful hardware and advanced software architecture. Schiller TT; Malackowski TT. In other words, the iPhone combined three separate products—a revolutionary mobile phone, a widescreen iPod with touch controls, and a breakthrough Internet communications device with desktop-class email, web browsing, searching and maps—into one small and lightweight handheld device. Schiller TT.

24. Thus, the iPhone introduced an entirely new user interface based on a large multi-touch display and pioneering new software, letting users control the iPhone with just their fingers. Schiller TT.

25. It also ushered in an era of software power and sophistication never before seen in a mobile device, completely redefining what users can do on their mobile phones. Schiller TT. The iPhone was revolutionary not just for its hardware, but for the operating system that ran on it, called iOS. Schiller TT. The operating system is a foundational layer of software; it allows applications to run and access features of the device, such as the touch screen. Malackowski TT.

26. The iPhone was, in short, earth-shattering when it first came to market. Schiller TT. It made the idea of a smartphone real, providing access to the internet, a real web browser, and MultiTouch—many of the features that remain at the core of what the smartphone is today. Schiller TT.

B. Apple did not originally allow third-party developers to build native apps for iOS.

27. The original iPhone came preinstalled with a few native apps, all of which were developed by Apple. Schiller TT; Cook TT. Third-party native applications could not be downloaded to the iPhone. Schiller TT.

28. When Apple launched the iPhone, Apple indicated that third-party developers could make web applications for distribution through the Safari web browser. Schiller TT.

    28.1 Apple enabled "Web Applications" as a way for developers to build applications using Web technologies for the iPhone. Schiller TT.

28.2 Apple added the ability to take icons and place them directly on the home screen of an iPhone so you can just tap on an icon and launch right into the Web application. Schiller TT; DX-3177, at -061.

28.3 By March 2008, there were well over 1,000 Web applications available for the iPhone. Schiller TT; DX-3177, at -061.

28.4 Apple made a clear judgment from the beginning that the Internet was an open avenue for all developers, but was cautious when it came to "sideloading"—permitting the installation of software from external third-party sources—because that involved placing software on Apple devices which could interact in harmful ways with Apple's iOS. Schiller TT.

29. To this day, Apple continues to make clear to all developers that the App Store is not the only way to make software available to iOS users. In the App Store Review Guidelines, Apple advises developers that "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." DX-3695, at -084.

C. Apple decides to open the iOS ecosystem to third-party developers.

30. When Apple was developing the iPhone, Apple executives discussed whether to permit third parties to develop native apps, but ultimately deferred the issue until after the launch of the iPhone. Schiller TT.

31. Following the release of the iPhone, there was interest from many developers in developing native apps for the iPhone. Schiller TT.

32. In May 2007, Steve Jobs was asked about native apps. Jobs responded that "I think sometime later this year we will find a way to let third parties write apps and still preserve security. But until we can find that way, we can't compromise the security of the phone. Nobody's perfect, but we sure don't want our phone to crash. We would like to solve this problem, if you could be just a little more patient with us, I think everyone can get what they want." DX-3177 at -075; Schiller TT.

33. After Apple "shipped [the iPhone], developers started jailbreaking phones and writing native applications," which Apple took "as an indication of their passion to build applications, native applications, for the iPhone." Forstall depo. at 86:1–5. Jailbreaking refers to a process that modifies Apple's iOS operating system to enable the installation of unauthorized software, including applications from other interfaces. Rubin TT. By jailbreaking one's device, a user can install apps that are not approved by any app review process (like sideloading, a different method for app installation that can bypass app stores and operating system vendors). Rubin TT.

34. The prevalence of jailbreaking created concerns for Apple. Jailbroken iPhones are widely considered to be a security risk. Rubin TT. Jailbroken phones pose severe security risks regarding malicious apps, data exposure, etc. for mobile devices. Rubin TT. There are documented cases of malware being distributed on jailbroken iPhones in ways that are not

possible on non-jailbroken iPhones. Rubin TT. Malware like this can be distributed via rogue apps that are only downloadable on jailbroken iPhones and, furthermore, the malware can use elevated privilege levels to perform malicious activity. Rubin TT.

35. Despite being provided with warnings, consumers continued to jailbreak phones and release new jailbreaking methods. These first-hand experiences with jailbreaking led some Apple executives to believe that Apple should be creating a platform and both enable and encourage developers to build native apps for the phones. Schiller TT.

36. In response to input from developers about their desire to develop native iOS apps, Apple revisited the issue and decided to create the ability for third parties to develop native iOS apps. Schiller TT.

37. In developing the ability for third party native apps to be distributed on the iPhone, Apple emphasized two foundational objectives. Schiller TT. The first was to protect the reliability of the device. Schiller TT; DX-4903 at -885 (quoting Steve Jobs, "[w]e define everything that is on the phone," he said. "You don't want your phone to be like a PC. The last thing you want is to have loaded three apps on your phone and then you go to make a call and it doesn't work anymore. These are more like iPods than they are like computers."). The second was to provide device security and protect users from malicious software. Schiller TT; DX-4498 ("I think sometime later this year we will find a way to let third parties write apps and still preserve security. But until we can find that way, we can't compromise the security of the phone.").

38. Accordingly, on October 17, 2007, Apple announced that it would create and license a software development kit ("SDK") for third-party developers. DX-4566; Schiller TT.

39. In the open letter announcing that Apple would release an iOS SDK, Apple explained:

> It will take until February to release an SDK because we're trying to do two diametrically opposed things at once—provide an advanced and open platform to developers while at the same time protect iPhone users from viruses, malware, privacy attacks, etc. This is no easy task. Some claim that viruses and malware are not a problem on mobile phones—this is simply not true. There have been serious viruses on other mobile phones already, including some that silently spread from phone to phone over the cell network. As our phones become more powerful, these malicious programs will become more dangerous. And since the iPhone is the most advanced phone ever, it will be a highly visible target.
>
> Some companies are already taking action. Nokia, for example, is not allowing any applications to be loaded onto some of their newest phones unless they have a digital signature that can be traced back to a known developer. While this makes such a phone less than "totally open," we believe it is a step in the right direction. We are working on an advanced system which will offer developers broad access to natively program the

> iPhone's amazing software platform while at the same time protecting users from malicious programs.
>
> We think a few months of patience now will be rewarded by many years of great third party applications running on safe and reliable iPhones.

DX-4566; Schiller TT. Those few months of patience were and continue to be rewarded billions of times over across the next many years.

D. Apple spends months creating an SDK for developers that permits access to Apple's valuable intellectual property.

40. iOS is proprietary to Apple, and only available on Apple devices. Schiller TT. In order to enable third parties to build apps for iOS, Apple had to take affirmative steps to build tools, kits, and interfaces that would allow third parties to develop software that works on Apple's proprietary operating system. Schiller TT.

41. To do this, Apple invested substantial resources in creating a state-of-the-art SDK for developers so that they could use Apple's intellectual property in order to develop software that runs on iOS. Schiller TT.

41.1 "The attention to detail for the SDK [was] unbelievable," and Apple "worked tirelessly literally going through a single API call for 10 iterations to make sure every single one is perfect." DX-3177, at -085; Federighi TT; Schiller TT.

41.2 The term "APIs" refers to application programming interfaces. Federighi TT. APIs are technical tools that simplify and accelerate the development process of apps. Federighi TT. These pre-built resources make it easier and faster for developers to enhance the user experience in their apps—improving the overall quality of apps and reducing development costs. Federighi TT. APIs provide meaningful benefits to all developers and are particularly valuable to small- and medium-sized developers. Federighi TT.

41.3 Apple has long protected its SDK, its APIs, its documentation, and the other tools necessary for building software that runs on iOS with patents, copyrights, and other intellectual property rights. Malackowski TT; *see also infra* § V.

42. The first SDK was released on March 6, 2008. DX-3177, at -076. The release of the SDK meant that third party developers could build native iPhone applications using the same SDK as Apple. DX-3177, at -062.

43. The original SDK gave developers access to various functions and services of iOS devices. Federighi TT. As described further below, developers would be able to use APIs that offered features like location awareness functionality, media applications, and video playback. DX-3177 at -062–63. Apple said at the time: "There are a lot of pieces that make up an SDK but the most important piece is the set of APIs, it's the platform. That suits [Apple] well because Apple is a platform company." *Id.*-at -062; Federighi TT.

44. In addition to including frameworks and APIs, Apple made available "a comprehensive set of tools to help developers quickly build, debug and optimize their applications." DX-3177 at -064; Federighi TT. These included Xcode, Project Management, Interface Builder, Next Instruments as well as the iPhone Simulator. DX-3177 at -064–65; Federighi TT. As discussed further below, many of these tools, like iOS itself, are protected by patents, copyrights, and trademarks. *See infra* § V.

45. At launch, Apple emphasized that the SDK would be a "fantastic platform for creating games" to be released on the App Store. DX-3177 at -074; Federighi TT. For example, Apple touted the built-in accelerometer. DX-3177 at -063–064. An EA Mobile representative explained how the accelerometer allowed for motion-based game play features and could be used in conjunction with touch-screen capability to create new types of mobile games. *Id.* at -068–69.

E. Apple describes the mechanics and business terms of the App Store.

46. After unveiling the SDK details at the product launch, Apple described its vision for a curated App Store. DX-3177 at -074.

46.1 Apple indicated that it had solved app distribution for every developer, "big to small," through the "App Store," an application written to deliver apps to the iPhone and that would be preinstalled on the iPhone. DX-3177 at -074; Schiller TT.

46.2 Apple explained: "So you are a developer and you've just spent two weeks or maybe a little bit longer writing this amazing app and what is your dream? Your dream is to get it in front of every iPhone user and hopefully they love it and buy it, right? That's not possible today. Most developers don't have those kinds of resources. Even the big developers would have a hard time getting their app in front of every iPhone user. Well, we are going to solve that problem for every developer, big to small, and the way we are going to do it is what we call the 'App Store.' This is an application we've written to deliver apps to the iPhone and we are going to put it on every single iPhone with the next release of the software. And so our developers are going to be able to reach every iPhone user through the App Store. This is the way we are going to distribute apps to the iPhone." DX-3177 at -074.

47. Software updates would be made available to consumers immediately, for free. DX-3177 at -075–76; Schiller TT. And the App Store was designed to automatically tell consumers when there are software updates available and if they want the update they "tap the Update button and [the] app will be replaced by the updated version…over the air, all automatically." DX-3177 at -075; Schiller TT.

48. The core App Store business terms—many of which remain in place today—were outlined during the SDK launch. DX-3177.

48.1 In order to gain access to more advanced APIs, beta software, and additional services, including those needed to distribute through the App Store, developers were required to join the Developer Program. DX-3177 at -076; Schiller TT. When

announced, the terms of this program, including the $99 annual fee, were greeted with enthusiasm by developers. DX-3177 at -076; Schiller TT.

48.2 Apple decided that "the developer picks the price" for apps. DX-3177 at -075.

48.3 Apple supported free pricing from the outset. Apple recognized even before the App Store opened that a lot of developers would pick the price of "free." DX-3177 at -075. "So when a developer wants to distribute their app for free, there is no charge for free apps at all." *Id.* "There's no charge to the user and there's no charge to the developer." *Id.* That includes apps that monetize through an advertising model; no matter how much ad revenue a developer earns, they pay Apple nothing. Schiller TT. To both Apple and the developers' benefit, this business model was designed "to get as many apps out in front of as many iPhone users as possible." DX-3177 at -075; Schiller TT; Rubinfeld TT.

48.4 The App Store was thus designed to serve "two big important classes" of developers: The "free" developer, who wants to distribute apps for free, and those who want to charge for their apps. DX-3177 at -081; Schiller TT. For the latter group, Apple had proven to developers "what a great revenue model it [could] drive in iTunes." DX-3177 at -082. But at the same time, "[f]ree apps d[id] just as well as paid apps sometimes," DX-5315 at -241 often generating significant revenue for developers through various monetization models like the use of in-app advertising. Schiller TT. "We love free apps," Steve Jobs said. DX-5315 at -353–54.

48.5 When Apple sells the app through the App Store "the developer gets 70% of the revenue[]"—"[t]here are no credit card fees for the developer," "[t]here are no hosting fees," "[t]here's no marketing fees." DX-3177 at -075.

48.6 As Mr. Jobs said, "[t]his [was] the best deal going to distribute applications to mobile platforms." DX-3177 at -075. As discussed in more detail below, the commercial terms were significantly more favorable for distributors than prior models: Other platforms "d[id] a lot less than we do" and charged at least as much as Apple, Mr. Jobs explained. DX-3731 at 10; *see also infra* VI.

48.7 Apple envisioned the App Store as "the exclusive way to distribute iPhone applications directly to every iPhone user." DX-3177 at -75. And it announced that some apps would be off limits—porn, malicious apps, "unforeseen" apps, apps that invaded one's privacy, illegal apps, and even "bandwidth hog[s]":

DX-4287 at 4:50; DX-3177 at -075; DX-5315 at -240; Schiller TT.

49. Thus, Apple also explained that there would be limitations placed on apps distributed through the App Store. Schiller TT.

50. Apple also indicated during the SDK launch that it was working to develop a model for enterprises where they can securely deliver applications just to their end-users in a very protected way. DX-3177 at -056–57, -060–61.

F. In 2009, Apple launches the integrated IAP option for developers to monetize their apps.

51. When the App Store first opened, the only time a consumer might pay for an app was at the time the user downloaded the app. Schiller TT. An app either (a) was free initially and forever free or (b) required an up-front payment with no additional charges. Schiller TT. In other words, there was no option for in-app purchases or upgrades. Schiller TT.

52. Developers seeking to monetize their apps other than through the initial purchase sought the ability to sell digital content and features within apps. Schiller TT; DX-4192 at -006. As Scott Forstall explained at the time:

> [D]evelopers have come to us saying there are other business models they'd love to support for their applications. For instance, subscriptions. There are publishers out there, things like magazines. They would love to have a magazine application right on the store where you can renew that subscription inside the application. There are game developers who would love to add additional levels and be able to sell game levels right from within the game. And there's a lot of other new content that developers like to sell inside an application. For instance, an e-book. Today you have to sell one application per book. There are e-book developers who would love to

> sell a generic e-book application and have a bookstore built into the app. I'm happy to say that we are supporting all of these additional purchase models in iPhone 3.0 and we are doing it with what we call 'in-app purchase.'

DX-4192 at -006.

53. In September 2009, Apple introduced in-app purchase (IAP) functionality. Schiller TT. Although IAP originally was available only for purchasing in-app content in paid apps, DX-4192 at -007, Apple expanded IAP to free apps in October 2009. Schiller TT.

54. IAP was never intended to facilitate the sale of physical goods; rather, the goal of IAP "was to make it easier for developers to sell digital goods" on iOS, through the App Store. Forstall depo. at 252:21–53:11. Apple made clear to developers that its standard commission would apply to such sales. Schiller TT.

55. IAP is a commerce functionality integrated within iOS that runs on a different set of APIs than the APIs used for paid apps and performs several functions at once. Gray TT. IAP first identifies the customer and the preferred payment method (such as PayPal or a credit card), then accumulates transactions and, when the total reaches a pre-specified limit, it contacts its third-party payment processors to process the combined payment. Gray TT. Next, the IAP system conducts fraud-related checks. Gray TT. After that, the payment is processed. Gray TT. The IAP system does not perform the payment processing itself. Gray TT. Rather, it outsources that function to a third-party payment processor, such as Chase for the U.S. storefront. Gray TT. These synchronized functions facilitate simultaneous transactions in which digital goods are delivered, payment is transferred, and Apple's commission is collected. Gray TT.

56. IAP is the App Store's secure and centralized system used to record sales, manage payments to developers, and collect commissions from developers that utilize the App Store. Gray TT; Schiller TT.

57. Apple's IAP system also provides or facilitates other user-friendly features. Gray TT. Because of IAP, users can view their purchase histories, store their payment information, reinstall previously purchased apps. Gray TT. IAP also enables features like Family Sharing, which permits access to subscriptions across Apple devices owned by family members. Gray TT. IAP also includes global parental controls that help prevent children from making purchases without parents' knowledge. Gray TT.

58. Creating such an integrated system was a substantial undertaking. Gray TT. While the investment was significant, IAP provided benefits to Apple, developers, and users alike. Gray TT.

59. Apple did not sell or charge developers to use IAP. Schiller TT. Instead, the IAP system created an efficient mechanism through which the company could collect its commission. Gray TT. Without IAP, Apple would have enormous difficulty in identifying the commissions to which it is entitled, and incur substantial costs in collecting the

commissions from each developer. Gray TT. Apple also benefitted because IAP made the platform more attractive to both developers and users. Schmalensee TT.

60. For developers, IAP opened up new monetization options for both developers and consumers. For example, it allowed "developers to offer subscription content and provide the ability to sell new content and features in a simple and secure process." Gray TT.

61. IAP also reduced frictions. Before IAP, developers would commonly offer both free and premium versions of their apps. Schiller TT; Gray TT. The idea was that if consumers liked the free version, they would pay for the premium version. Schiller TT. But this was inconvenient for consumers and created friction for developers trying to sell their products. Schiller TT; Gray TT. IAP helped address this: Developers now could produce a single app with multiple enhancements that could be unlocked through in-app purchases. Schiller TT; Gray TT.

62. IAP also unlocked the "freemium" model (among others) whereby developers could release apps for free and charge customers within the app for extra content. Schiller TT; Schmalensee TT. This model became particularly popular, allowing developers to dramatically increase the revenue they generated on the App Store. DX-3734 at -153.

63. From the inception of IAP, IAP has always been a tool in the developer's tool kit to facilitate in-app transactions, and not a separate product. Gray TT; *see also infra* § IV.C & XXIV. There is no additional fee to the developers for including IAP within their apps. Gray TT. IAP is also not a payment processor. Gray TT.

IV. PRIVACY, SECURITY, DEVICE INTEGRITY, AND OVERALL CUSTOMER EXPERIENCE

A. In opening up the iPhone to third-party applications, Apple sought to protect consumers and prioritize their experience.

64. Apple explained that in creating the App Store it took steps to make sure the applications "are going to be secure and don't violate user privacy" and that this was a big concern. DX-3177 at -079.

65. Apple "tried to strike a really good path": "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 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." DX-3177 at -079.

66. Ensuring the stability of the device was also of critical importance to Apple. Schiller TT; Federighi TT. The iPhone is a phone first and foremost; that is the killer app for the phone. Schiller TT. When consumers buy an iPhone, it should always be able to make and receive phone calls. Schiller TT.

67. As Steve Jobs explained in an interview, "I think sometime later this year [in 2008] we will find a way to let third parties write apps and still preserve security. But until we can find that way, we can't compromise the security of the phone. Nobody's perfect, but we sure don't want our phone to crash. We would like to solve this problem, if you could be just a little more patient with us, I think everyone can get what they want." DX-4498. "The last thing you want is to have loaded three apps on your phone and then you go to make a call and it doesn't work anymore." DX-4903 at -885.

B. To achieve these goals, iOS architecture intentionally diverged from the macOS architecture in material ways.

68. Apple recognized that an iPhone was different than both Macs and iPods—it was a new device with a new set of demands and challenges. Federighi TT; Schiller TT. Unlike a Mac or iPod, the iPhone was a phone that individuals would carry around and need to use as a phone. Schiller TT; Cook TT. The iPhone would also contain highly sensitive personal information—often more sensitive than that stored on a typical computer. Federighi TT; Rubin TT. This includes financial information, health information, and physical location information. Federighi TT. Consumers have low tolerance for slow smartphone device time and functionality disruptions. Schiller TT. Moreover, a phone can be one's lifeline in an emergency situation during which a crash or other performance issue could have disastrous results. Schiller TT; Cook TT. And its size and portability also means that a phone may be misplaced or stolen, which creates an additional security risk profile. Federighi TT. The iPhone therefore had to be more secure and more reliable than PCs were at the time. Schiller TT.

69. Security concerns were particularly salient when the iPhone was launched: The Internet's growth had led to a proliferation of viruses and malware that were bogging down the speed and performance of computers. Schiller TT.

70. Apple therefore viewed the development of iOS as an opportunity to improve on the operating system for its Macintosh line of personal computers, what became known as macOS. Federighi TT. The macOS architecture originally had been designed before the advent of the Internet. As a result, the iOS architecture was informed by decades of experience with macOS in the desktop and laptop environment but improved and altered aspects of the macOS architecture to protect the iPhone and consumers. Federighi TT. The iOS architecture also was designed with some of the constraints of mobile devices in mind, including more limited processing power and storage space relative to personal computers. Schiller TT; Federighi TT.

71. "Apple designed the iOS platform with security at its core." DX-3561 at -311. Apple "drew from decades of experience to build an entirely new architecture," "thought about the security hazards of the desktop environment, and established a new approach to security in the design of iOS." *Id.* Apple "developed and incorporated innovative features that tighten mobile security and protect the entire system by default." *Id.* "As a result, iOS is a major leap forward in security for mobile devices." *Id.*

72. Apple made certain design decisions for iOS that differed from macOS. Significantly for the purposes of this case, iOS contained technical restrictions to deter the installation of software from external third-party sources—what has since become known as sideloading—even though, in light of entrenched consumer and developer expectations, one could do so on macOS. Cook TT; Federighi TT. Because there was even more personal and other information implicating privacy and safety concerns on iPhones than on PCs, such as health or location information, and because iPhone users will carry the phone around with them and expect it to work on demand, Apple wanted to ensure that iOS devices were more protected from those malware and instability issues and quality issues that the PC world was used to. Schiller TT.

73. "Sideloading" for iOS would create unacceptable vulnerabilities from Apple's perspective.

73.1 Opening the platform would have risked exposing it to viruses and malware, and Apple's "security approach" for the first iPhone "was not to enable native compiled third party apps to install and run on the iPhone." Forstall depo. at 66:4-10.

73.2 Apple had many discussions about the risk to users of downloading software outside of the App Store, and was aware that malware on other devices was far in excess of that on iOS. Schiller TT. That knowledge informed how Apple designed the App Store. Schiller TT.

74. Apple also built into iOS several features that improved security, reliability and stability for the device and consumer prior to introducing the App Store. Federighi TT; *see also* DX-3177 at -080 ("Technically we are putting a number of different things in place from sandboxing to other technical things you want to do to protect applications and the system. . . .).

74.1 One feature was app code signing, which requires the code for every iOS app to be signed using the private key associated with a certificate obtained from Apple. Federighi TT; Rubin TT; DX-3561 at -325. This prevents untrusted apps, which could be potentially malicious, from running on an iOS device. Federighi TT; Rubin TT. This contrasts with systems such as Android, which do not require certificates to be obtained from a principal authority. Rubin TT.

74.2 Another feature was sandboxing. Federighi TT; Rubin TT; DX-3561 at -326. Sandboxing isolates third-party apps from critical system resources on the device as well as from other apps. Federighi TT; Rubin TT. This prevents a third-party app from making changes to the device and from accessing files stored by other apps unless granted permission by the user. Federighi TT; Rubin TT. Similarly, system files and resources are shielded from users' apps. DX-3561 at -326. Unnecessary tools, such as remote login services, are not included in the system software. *Id.* Thus, sandboxing not only makes the user's experience more secure and stable but also benefits developers by protecting their apps from interference or infection from another app. Federighi TT.

74.3 Apple also restricted developers' access to "private" APIs—APIs that are created by Apple for internal use only, through which system functions can be accessed. Federighi TT. For example, private APIs can act as connection points to system functionality and provide highly critical routines such as enabling an iPhone's phone app to connect to a network and dial a call. Federighi TT. Restricting third party developers' access to Apple's private APIs helps ensure that apps cannot interfere with the core functions and stability of iOS. Federighi TT; Kosmynka TT; Rubin TT.

74.4 Apple also built entitlements—controls on which operating system resources may be accessed by apps or other software—into iOS. Federighi TT; Kosmynka TT; DX-3561 at -326. Each app is granted a particular set of entitlements that govern its access rights. Federighi TT; Kosmynka TT; Rubin TT. In general, Apple does not permit an app to utilize entitlements that are not connected to the purpose of the app (e.g., a sketching program that does not need access to the contact list). Federighi TT; Kosmynka TT; Rubin TT. Apple's App Review process accordingly reviews the entitlements requested for an app in order to determine whether they are reasonable or whether they may betray a malicious or generally negative ulterior motive. Federighi TT; Kosmynka TT; Rubin TT. Apple's process of reviewing entitlement requests can entail communication with Apple's reviewers. Federighi TT; Kosmynka TT; Rubin TT.

74.5 An app that requests unnecessary entitlements could be performing malicious behavior. Rubin TT. For example, a calculator app that requests access to the iPhone's camera or microphone could have an ulterior motive of recording a user's private activities. Federighi TT; Kosmynka TT; Rubin TT. Apple's extra scrutiny of the entitlements afforded to an app provides a critical additional layer of security and protection for iOS device users, both by preventing apps with malicious and/or hidden motives from becoming available to users for download and installation on their devices as well as, once on the device, limiting their access to the previously identified entitlements. Federighi TT; Kosmynka TT; Rubin TT. This extra scrutiny has resulted in iOS device users facing fewer security risks than Android-based device users, whose Android devices typically allow apps to define their own permissions for accessing and sharing resources and capabilities with other apps and thus could access privileged functionality without alerting their users. Rubin TT; Federighi TT; Kosmynka TT.

74.6 [redacted]

75. Many of these features were originally unique to iOS and had not existed in Apple's macOS. Federighi TT. Indeed, Apple has been making efforts to adapt various macOS security features to mimic those of iOS's more closely, Rubin TT, such as incorporating sandboxing into macOS. Federighi TT.

C. Apple built IAP on principles of efficiency, reliability, security, and privacy.

76. Apple's App Store commerce team was responsible for, among other things, reducing friction in in-app purchases and making them more efficient for consumers. Gray TT. One way to accomplish this goal was the development and continued refinement of IAP. Gray TT; Malackowski TT.

77. As described above, IAP facilitates the delivery of digital content from developer to user in a seamless, reliable manner. Gray TT; *see also supra* § III.F.

78. In doing so, IAP provides an efficient, frictionless payment experience for consumers. Gray TT. Through IAP, Apple permits consumers to store payment methods, either when they set up an Apple ID or at the time of transaction. Gray TT. Saved payment methods can be used to pay for app downloads or in-app purchases. Gray TT.

79. To further reduce friction, Apple maintains consumers' different payment methods [redacted] Gray TT. When a consumer wants to make an in-app purchase, the user is authenticated and the transaction can happen seamlessly and securely. Gray TT. Consumers also can stack their payment instruments, so that if one payment method does not work, the system will automatically use the next one—further reducing friction. Gray TT.

80. Similarly, Apple has created a sophisticated payment removal method to make sure that consumers' services remain seamless when they change payment methods. Gray TT.

81. IAP also provides important security benefits. [redacted]

82. Apple has even built an entire architecture to handle receipt handling and verification securely. Gray TT. This can be used to verify whether a purchase receipt is authentic, providing developers with assurance in the integrity of their transactions. Gray TT.

83. And these are but a few of the security features Apple has developed for IAP. [redacted]

84. In other words, Apple made a significant investment in an IAP system with robust security. Gray TT. And Apple continues to invest in and improve that system today. Gray TT. Moreover, the specific details of IAP's internal APIs are not available to third parties—ensuring that Apple's proprietary security mechanisms are not exposed to the general public. Gray TT.

85. In addition, IAP fraud protection is enhanced by the very fact that it is a centralized system for the entire iOS ecosystem. Gray TT; Rubin TT. That is because fraud detection techniques become more effective as more data points become available, Rubin TT, and, by centralizing all purchases of digital goods and services, IAP has a large number of data points to analyze and continuously improve the efficacy of its algorithms. *Id.*; Gray TT.

86. Such robust protections are important in light of the various types of payment fraud that consumers might commit, including a hostile takeover of a credit card number, using one's own credit card with no intention of paying, or reporting a purchase as unauthorized when in fact the purchase was legitimate. Gray TT.

87. IAP also provides important privacy benefits. Gray TT. Breach of a third-party payment system would potentially expose private data, including financial information and personally identifiable information ("PII"), to attackers. Gray TT; Rubin TT. Using IAP, Apple can apply its advanced and tested security protections to ensure that its customers' private information is safeguarded. Gray TT; Rubin TT. IAP also avoids the need for each developer to take and store a user's financial information. Gray TT.

V. APPLE'S VALUABLE INTELLECTUAL PROPERTY IS AT THE HEART OF IOS APP DEVELOPMENT AND DISTRIBUTION

88. Innovation is the cornerstone of Apple's business and the company prides itself on the commitment to "think different," inventing products and services unlike anything on the market. Cook TT; Malackowski TT. Apple's intellectual property is of enormous significance to the company. Some third party analyses estimate that it comprises over 60% of Apple's business enterprise value. Malackowski TT.

89. The iOS ecosystem, including the App Store, is made possible by, and comprised of, Apple's intellectual property, and without the use of that intellectual property, it would not be possible to build an app for iOS. Cook TT; Schiller TT.

89.1 Apple has invested substantially in protecting its intellectual property rights in its iOS ecosystem. Malackowski TT. Apple holds approximately 1,237 U.S. patents, and an additional 559 patent applications, related to iOS. Malackowski TT. Apple also holds 165 U.S. patents and 91 U.S. patent applications related to the App Store. Malackowski TT. Apple holds hundreds of U.S. patents and patent applications related to app distribution and development, including comprehensive app developer tools, frameworks and related services directed towards the infrastructure of iOS apps and their use of data and web content, advanced user interactions and features, in-app purchase functionality, and security and privacy innovations that are designed into iOS and iPhone hardware and software. Malackowski TT.

89.2 Apple also protects its original content with copyright protection, holding hundreds of iOS-specific copyrights. Malackowski TT. And it also has secured trademark protection related to the App Store and several software tools used by app developers. Malackowski TT; DX-3229.

89.3 Apple has provided app developers, including Epic, access to many aspects of its intellectual property for distributing apps and conducting in-app purchases. Schiller TT; Malackowski TT. For example, Epic has used Apple's software tools and APIs, including their functions and libraries as well as tool chains, software compiler, and software linker. Grant TT. Apple permitted Epic to use Apple Business Manager, Ad Hoc (which allowed a limited number of users to install Epic's apps directly on their Apple devices for testing and internal distribution), Developer ID (which allowed Epic to distribute its Mac apps), plug-ins, and installer packages outside of the Mac App Store by signing them with a Developer ID certificate and having them notarized by Apple. Schmid TT. Apple also gave Epic with access to Developer Events, which provides developers with technical details and guidance from Apple experts, Technical Support, Developer Forums, and Membership Support. Schmid TT.

89.4 Apple vigorously protects and enforces its intellectual property. It has filed multiple patent, copyright, and trademark lawsuits around the world. Malackowski TT. It has provided testimony to the Copyright Office about its commitment to protecting its copyrights. Malackowski TT. And it has invested in identifying and eliminating leaks of its intellectual property, resulting in the arrest of 12 individuals in 2017 for leaking proprietary information. Malackowski TT.

90. Unlike many other large companies, such as Google or Microsoft, Apple does not license iOS to original equipment manufacturers. Schiller TT; Malackowski TT. iOS is only available on devices made by Apple. Schiller TT; Malackowski TT. It is not sold or made available separately. Schiller TT.

91. Apple has chosen to reserve and exercise its right to exclusively use some of its other intellectual property for the design and production of its own products. Malackowski TT. As Epic's employees concede, developers, including Epic, have no right to use Apple's proprietary software, tools, or services without being granted those rights pursuant to a license agreement. Penwarden depo. at 46:15–48:11; DX-3669 at 7–9.

92. At the same time, Apple has chosen to allow use of certain intellectual property (including access to iOS itself) pursuant to license agreements. Schiller TT; Federighi TT. All iOS users agree to the iOS and iPadOS Software License Agreement. DX-4905. This agreement reinforces Apple's protection of its intellectual property, providing that Apple's "software . . . are licensed, not sold, to you" and that "Apple and its licensors retain ownership of the Apple Software itself." *Id.* at -049. This user license does not permit users to use Apple's intellectual property to develop applications, which is covered by separate agreements. Schiller TT; DX-4905 at -050.

VI. IN EXCHANGE FOR USING APPLE'S INTELLECTUAL PROPERTY TO DEVELOP AND DISTRIBUTE APPS THROUGH THE APP STORE, DEVELOPERS MUST ABIDE BY THE TERMS OF APPLE'S LICENSE AGREEMENTS

A. To develop apps for iOS, developers agree to abide by the terms of the Developer Agreement.

93. Today, "[t]here are many ways to monetize [an] app on the App Store." DX-3695 at -093. As Apple has explained to developers, there are at least five business models developers can use to make money on their apps: the free, freemium, subscription, paid, and paymium models. DX-4614. Under the "paid model," for instance, a developer may charge a price for the user to download the app. Schiller TT. A developer may instead choose the "freemium model," allowing users to download an app for free but permitting in-app purchases—the primary model Epic uses for *Fortnite*. Schiller TT. Or a developer can offer subscriptions to users (for sale in the app, through a different platform, or online); can sell users digital currencies that can be used in the app (for sale in the app, through a different platform, or online); can sell advertisements in the app; or can charge for in-app promotions and events. Schiller TT. Developers also may hybridize these models, mixing and matching them as they choose. Schiller TT.

94. No matter the business model a developer wants to use, the first step for developing an app using Apple's intellectual property is agreeing to the Apple Developer Agreement. Schiller TT; DX-4125. The terms of this agreement are standardized and not negotiated. Schiller TT. A developer cannot enter into any other agreement with Apple, such as the Developer Program License Agreement, until it first executes the Developer Agreement and remains a party to the Developer Agreement. Schiller TT.

95. The Developer Agreement governs certain foundational elements of the relationship between Apple and a developer, such as confidentiality and protection of Apple's intellectual property rights. Schiller TT; DX-4125 at -258.

96. By signing the agreement, developers gain access to certain proprietary app development tools that Apple designed to help developers learn how to develop apps for Apple platforms for free. Schiller TT. This includes Xcode, an integrated development environment that assists developers in designing, developing, and debugging software for macOS, iOS, iPadOS, watchOS, and tvOS. Schiller TT; Malackowski TT.

97. The agreement also provides that developers "may have the opportunity to attend certain Apple developer conferences, technical talks, and other events." DX-4125 at -258. Similarly, developers "may have access to Apple's software and/or hardware compatibility testing and development labs and/or developer technical support incidents." *Id.* at -260 (internal parenthetical omitted).

98. Developers pay nothing to Apple for access to these tools and services. Schiller TT. They do, however, agree to abide by certain restrictions in using Apple's intellectual property. DX-4125 at -258. As set forth in Section 3 of the Developer Agreement:

> You agree not to exploit the Site, or any Services, Apple Events or Content provided to you by Apple as an Apple Developer, in any unauthorized way, including but not limited to, by trespass, burdening network capacity or using the Services, Site or Content other than for authorized purposes. Copyright and other intellectual property laws protect the Site and Content provided to you, and you agree to abide by and maintain all notices, license information, and restrictions contained therein. Unless expressly permitted herein or otherwise permitted in a separate agreement with Apple, you may not modify, publish, network, rent, lease, loan, transmit, sell, participate in the transfer or sale of, reproduce, create derivative works based on, redistribute, perform, display, or in any way exploit any of the Site, Content or Services. You may not decompile, reverse engineer, disassemble, or attempt to derive the source code of any software or security components of the Services, Site, or Content (except as and only to the extent any foregoing restriction is prohibited by applicable law or to the extent as may be permitted by any licensing terms accompanying the foregoing). Use of the Site, Content or Services to violate, tamper with, or circumvent the security of any computer network, software, passwords, encryption codes, technological protection measures, or to otherwise engage in any kind of illegal activity, or to enable others to do so, is expressly prohibited. Apple retains ownership of all its rights in the Site, Content, Apple Events and Services, and except as expressly set forth herein, no other rights or licenses are granted or to be implied under any Apple intellectual property.

Id.

99. Under the Developer Agreement, "Apple may change, suspend or discontinue providing the Services, Site and Content to you at any time, and may impose limits on certain features and materials offered or restrict your access to parts or all of such materials without notice or liability." DX-4125 at -258 (Section 2). Apple also "may terminate or suspend [a developer] as a registered Apple Developer at any time in Apple's sole discretion," and, if it does so, Apple also "reserves the right to deny your reapplication at any time in Apple's sole discretion." *Id.* at -261 (Section 10). By the same token, a developer "may terminate your participation as a registered Apple Developer at any time, for any reason, by notifying Apple in writing of your intent to do so." *Id.* "Upon any termination or, at Apple's discretion, suspension, all rights and licenses granted to you by Apple will cease, including your right to access the Site, and you agree to destroy any and all Apple Confidential Information that is in your possession or control." *Id.*

100. There are over 27 million registered iOS developers who have agreed to abide by the Developer Agreement. Schiller TT.

B. To distribute iOS apps, developers must sign the Developer Program License Agreement.

101. To distribute apps using Apple Software, developers must sign the Developer Program License Agreement ("DPLA") and pay a $99 annual fee. Schiller TT; DX-3900. Developers also must provide valid debit/credit card information; provide a valid name, address, and telephone number; and, in some instances, provide a government-issued photo identification. Schiller TT; Rubin TT. For developers employed by an organization, Apple

has additional verification steps that include conducting checks for the organization's legal entity names and D-U-N-S number, among other things. Schiller TT; Rubin TT.

102. The DPLA's terms are standardized and not negotiated. Schiller TT.

103. The DPLA states: "***You would like to use the Apple Software (as defined below) to develop one or more Applications (as defined below) for Apple-branded products. Apple is willing to grant You a limited license to use the Apple Software and Services provided to You under this Program to develop and test Your Applications on the terms and conditions set forth in this Agreement.***" DX-3900 at -264 (emphasis added).

104. The benefits of signing the DPLA are significant. It allows developers to use Apple's proprietary software "to develop one or more Applications for Apple-branded products." DX-3900 at -264 (internal parenthetical omitted). And members of the Apple Developer Program gain access to "Apple Software" and "Apple Services"—a vast suite of software and services (over which Apple still retains all legal "rights, title and interest"). *Id.* at -265–66, -274; Schiller TT.

104.1 In addition to using Apple's Xcode, Apple Developer Program members may access Apple's proprietary software for advanced app development. DX-4623 at -272; Schiller TT. First and foremost, this includes Apple's SDK, a suite of development tools that Apple improves upon with each new iOS version. Schiller TT.

104.2 Developers also gain access to many other powerful, proprietary tools. Schiller TT. These currently include Metal Developer Tools, Reality Composer 1.5 beta, Apple Configurator 2.13 beta, Schoolwork 2.1 beta. Schiller TT; DX-4623 at -265–66. They also include over 150,000 APIs, such as TestFlight, as well as header files, libraries, simulators, and samle source code utilizing such APIs, among other things. Schiller TT. Indeed, Apple has created an API or other tool—and made them available through the Developer Program—for virtually every task a developer might wish to implement with software or hardware. Schiller TT; Malackowski TT; *infra* § XI.B–D (detailing the multitude of benefits Epic has received from Apple during the course of their relationship)).

104.3 Another benefit to the developer program is access to beta or pre-release versions of iOS and other Apple software. Schiller TT. So while iOS 14.4 was the then-available iOS version in February 2021, for example, members of the Apple Developer Program already had access to the iOS 14.5 beta at that time. Schiller TT; Federighi TT; Malackowski TT.

104.4 Apple also offers many services to members of the developer program. Schiller TT. It gives free business and technical reviews to registered developers, for example. Schiller TT. Apple also provides developers with sales and trends reports and assists them in deciding whether and which international markets to enter. Schiller TT; DX-3513 at -374.

104.5 Developers also can join the vibrant developer community Apple has built around events like WWDC. Schiller TT. Apple invites certain developers to showcase their products—an opportunity given to Epic on multiple occasions. Rein depo. at 49:16–21; Penwarden depo. at 121:12–123:4; DX-3963; DX-3123; DX-3630. Epic has also benefited from Apple's consultation opportunities. Grant TT.

105. Signing the DPLA is a necessary prerequisite to distributing apps through (1) the App Store; (2) on a limited basis through certain specialty storefronts (called "Custom App Distribution"); (3) on a limited basis for use on registered devices (called "ad hoc" distribution); or (4) for beta testing through TestFlight. DX-3900 at -264, -267, -278, -299. (Apple's Developer Enterprise Program, another mechanism through which certain companies can develop and distribute apps for their employees, is governed by a separate agreement. Schiller TT.)

106. In exchange for access to Apple's intellectual property, developers agree in the DPLA to abide by several commitments, which have been tailored over time. Schiller TT.

106.1 In Section 3.1 of the current DPLA, 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." DX-3900 at -277.

106.2 In Section 3.2 of the DPLA, developers agree, among other things, that (1) they "will use the Apple Software and any services only for the purposes and in the manner expressly permitted by this Agreement and in accordance with all applicable laws and regulations," (2) their "Application, Library and/or Pass will be developed in compliance with the Documentation and the Program Requirements" set forth in Section 3.3 of the DPLA, (3) their app "do[es] not and will not violate, misappropriate, or infringe any Apple or third party copyrights, trademarks, rights of privacy and publicity, trade secrets, patents, or other proprietary or legal rights," (4) they "will not, through use of the Apple Software, Apple Certificates, Apple Services or otherwise, create any Covered Product or other code or program that would disable, hack or otherwise interfere with the Security Solution, or any security, digital signing, digital rights management, verification or authentication mechanisms implemented in or by iOS, watchOS, iPadOS, tvOS, the Apple Software, or any Services, or other Apple software or technology, or enable others to do so (except to the extent expressly permitted by Apple in writing)," and (5) they "will not, directly or indirectly, commit any act intended to interfere with the Apple Software or Services, the intent of this Agreement, or Apple's business practices including, but not limited to, taking actions that may hinder the performance or intended use of the App Store, Custom App Distribution, or the Program." DX-3900 at -278.

106.3 Section 3.2 of the DPLA further states: "Applications for iOS Products, Apple Watch, or Apple TV developed using the Apple Software may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store, Custom App Distribution, for beta distribution through TestFlight, or through Ad Hoc distribution as contemplated in this Agreement." DX-3900 at -278.

106.4 In Section 3.3 of the DPLA, developers agree that "[a]ny Application that will be submitted to the App Store . . . must be developed in compliance with the Documentation and the Program Requirements." DX-3900 at -278. Among these requirements, sections 3.3.2 and 3.3.3 provide:

> **3.3.2** Except as set forth in the next paragraph, an Application may not download or install executable code. Interpreted code may be downloaded to an Application but only so long as such code: (a) does not change the primary purpose of the Application by providing features or functionality that are inconsistent with the intended and advertised purpose of the Application as submitted to the App Store, (b) does not create a store or storefront for other code or applications, and (c) does not bypass signing, sandbox, or other security features of the OS.
>
> 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).
>
> **3.3.3** Without Apple's prior written approval or as permitted under **Section 3.3.25** (**In-App Purchase API**), an Application may not provide, unlock or enable additional features or functionality through distribution mechanisms other than the App Store, Custom App Distribution or TestFlight.

DX-3900 at -279. As the DPLA explains, "'**In-App Purchase API**' means the Documented API that enables additional content, functionality or services to be delivered or made available for use within an Application with or without an additional fee." *Id.* at -268.

106.5 Finally, developers agree that "[a]ll use of the In-App Purchase API and related services must be in accordance with the terms of this Agreement (including the Program Requirements) and Attachment 2 (Additional Terms for Use of the In-App Purchase API)." DX-3900 at -283. Apple's IAP APIs must be used only for certain

in-app purchases (for example, it does not apply to purchases of physical goods). Schiller TT; DX-3695 at -096 (Section 3.1.5(a).

106.6 The terms of Attachment 2 specify that a developer "must submit to Apple for review and approval all content, functionality, or services that [the developer] plan to provide through the use of the In-App Purchase API in accordance with these terms and the processes set forth in **Section 6 (Application Submission and Selection)** of the Agreement." DX-3900 at -313. "For all submissions, You must provide the name, text description, price, unique identifier number, and other information that Apple reasonably requests." *Id.* "If [a developer] would like to provide additional content, functionality or services through the In-App Purchase API that are not described in [the] Submission Description, then [the developer must first submit a new or updated Submission Description for review and approval by Apple prior to making such items available through the use of the In-App Purchase API." *Id.*

107. Section 6.1 of the DPLA governs the submission to Apple for distribution through the App Store. DX-3900 at -295. It provides:

> You may submit Your Application for consideration by Apple for distribution via the App Store or Custom App Distribution once You decide that Your Application has been adequately tested and is complete. By submitting Your Application, You represent and warrant that Your Application complies with the Documentation and Program Requirements then in effect as well as with any additional guidelines that Apple may post on the Program web portal or in App Store Connect. You further agree that You will not attempt to hide, misrepresent or obscure any features, content, services or functionality in Your submitted Applications from Apple's review or otherwise hinder Apple from being able to fully review such Applications. . . . You agree to cooperate with Apple in this submission process and to answer questions and provide information and materials reasonably requested by Apple regarding Your submitted Application, including insurance information You may have relating to Your Application, the operation of Your business, or Your obligations under this Agreement. . . . If You make any changes to an Application (including to any functionality made available through use of the In-App Purchase API) after submission to Apple, You must resubmit the Application to Apple. Similarly all bug fixes, updates, 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.

Id.

108. Schedules appended to the DPLA outline additional terms specific to the distribution of apps on the App Store. Schiller TT. Distribution of free apps through the App Store is governed by Schedule 1 to the License Agreement; distribution of paid apps or apps offering in-app purchases through the App Store requires execution of an additional Schedule 2 to the License Agreement. Schiller TT.

109. Schedule 2 contains two key commitments.

109.1 First, developers agree to pay Apple a commission on those in-app purchases. DX-3256 at -345–46. The general rule is that "Apple shall be entitled to a commission equal to thirty percent (30%) of all prices payable by each End-User." *Id.* at -346. "[F]or auto-renewing subscription purchases made by customers who have accrued greater than one year of paid subscription service," however, "Apple shall be entitled to a commission equal to fifteen percent (15%) of all prices payable by each End-User for each subsequent renewal." *Id*. The purpose of this commission is for Apple to a return on its investment in the App Store through a royalty on the licensing of its intellectual property. Schiller TT.

109.2 Second, developers acknowledge that any "violat[ion] [of] the terms of the Agreement, this Schedule 2, or other documentation including without limitation the App Review Guidelines" is grounds for Apple "to cease marketing, offering, and allowing download by End-Users of the Licensed Applications at any time, with or without cause, by providing notice of termination to You." DX-3256 at -351.

110. The DPLA also contains an indemnity provision (Section 10). Schiller TT; DX-3900 at -302. It states:

> 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 (collectively, "Losses"), incurred by an Apple Indemnified Party and arising from or related to any of the following (but excluding for purposes of this Section, any Application for macOS that is distributed outside of the App Store and does not use any Apple Services or Certificates): (i) Your breach of any certification, covenant, obligation, representation or warranty in this Agreement, including Schedule 2 and Schedule 3 (if applicable); (ii) any claims that Your Covered Product or the distribution, sale, offer for sale, use or importation of Your Covered Product (whether alone or as an essential part of a combination), Licensed Application Information, metadata, or Pass Information violate or infringe any third party intellectual property or proprietary rights; (iii) Your breach of any of Your obligations under the EULA (as defined in Schedule 1 or Schedule 2 or Schedule 3 (if applicable)) for Your Licensed Application; (iv) Apple's permitted use, promotion or delivery of Your Licensed Application, Licensed Application Information, Safari Push Notification, Safari Extension (if applicable), Pass, Pass Information, metadata, related trademarks and logos, or images and other materials that You provide to Apple under this Agreement, including Schedule 2 or Schedule 3 (if applicable); (v) any claims, including but not limited to any end-user claims, regarding Your Covered Products, Licensed Application Information, Pass Information, or
> related logos, trademarks, content or images; 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.
>
> You acknowledge that neither the Apple Software nor any Services are intended for use in the development of Covered Products in which errors or inaccuracies in the content, functionality, services, data or information provided by any of the foregoing or the failure of any of the foregoing, could lead to death, personal injury, or severe physical or environmental damage, and, to the extent permitted by law, You hereby agree to indemnify, defend and hold harmless each Apple Indemnified Party from any Losses incurred by such Apple Indemnified Party by reason of any such use.
>
> In no event may You enter into any settlement or like agreement with a third party that affects Apple's rights or binds Apple in any way, without the prior written consent of Apple.

Id.

C. To qualify for distribution through the App Store, iOS apps must comply with the App Store Review Guidelines.

111. Apple seeks to create a unique ecosystem by offering a highly curated App Store where every app and every app update approved to the App Store is reviewed by Apple employees who are experts in app review. Kosmynka TT; DX-3695 at -084. Apps distributed through the App Store must comply with Apple's App Store Review Guidelines. Schiller TT. This protects "[c]ustomer trust" in the App Store's "safe experience for users"—"the cornerstone of the App Store's success"—as well as maintains Apple's standards for high-quality apps. DX-3695 at -108; Schiller TT.

112. The App Store Review Guidelines are not only detailed and wide reaching but also periodically updated and improved to address emerging issues and security threats. DX-3695 at -085; Kosmynka TT; Rubin TT. As explained in the Guidelines: "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." DX-3695 at -086.

113. The Guidelines thus address safety, privacy, performance and reliability issues. For example, the Guidelines address the provision of false information and features, defamatory, or mean-spirited content, and depictions that encourage illegal or reckless use of weapons and dangerous objects, as well as privacy and data security considerations. DX-3695 at -086. The Guidelines further cover performance and reliability issues, because "[c]ustomers should know what they're getting when they download or buy [an] app." *Id.* at -089. According to the Guidelines, an "app's functionality should be clear to end-users and App Review" and should not "include any hidden or undocumented features." *Id.* The Guidelines are also intended to prevent apps from trying to use a business model that is unclear to users, constitute "clear rip-offs," infringe upon another's intellectual property, or violate other legal restrictions. *Id.* at -093, -106. They are intended to ensure that the

App Store "a safe experience for users to get apps and a great opportunity for all developers to be successful." *Id.* at -084.

114. Several provisions are dedicated to data security and privacy. DX-3695 at -088, -103. Indeed, the Guidelines acknowledge that "[p]rotecting user privacy is paramount in the Apple ecosystem," and developers "should use care when handling personal data to ensure [they] complied with privacy best practices, applicable laws, and the terms of the Apple Developer Program License Agreement, not to mention customer expectations." *Id.* at -103.

114.1 To that end, Section 1.6 states that "[a]pps 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." DX-3695 at -088.

114.2 Sections 5.1.1–5.1.3 set out specific policies with which apps must comply:

> **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.

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, Consumer 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.

DX-3695 at -103–05.

114.3 Guideline 2.5 sets out additional software security requirements:

> **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 Local Authentication (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.

DX-3695 at -091–93.

115. In addition, the Guidelines explain that "[i]f 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." DX-3695 at -093–94 (Section 3.1.1). In other words, the App Store Review Guidelines require that digital goods and services sold in an app must use IAP. Kosmynka TT.

116. For developers who elect to distribute apps through the App Store, the Guidelines make clear that developers "are responsible for making sure everything in your app complies with these guidelines, including ad networks, analytics services, and third-party SDKs." DX-3695 at -085.

117. The Guidelines warn, "[i]f 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." DX-3695 at -085. This is not an idle admonition: Apple has terminated for policy violations over 75,000 unique accounts for introducing new

features without going through App Review and over 60,000 accounts for using obfuscation techniques or introducing hidden features. Kosmynka TT; Schiller TT.

D. Apple conducts a robust app review before apps are published.

118. Every app and every app update submitted for distribution on the App Store is reviewed pursuant to Apple's App Review process to ensure compliance with the App Store Review Guidelines and DPLA, which require, among other things, that the app performs as expected and "doesn't contain upsetting or offensive content, won't damage [the user's] device, and isn't likely to cause physical harm from its use." DX-3695 at -086; Kosmynka TT. Apple has designed a rigorous App Review process, using proprietary review tools and information, in which it continues to invest and evolve in order to protect users and developers alike from fraud, malware, and unwarranted intrusion into their privacy, as well as to evaluate the operation and reliability of proposed apps and app updates. Cook TT; Kosmynka TT.

119. Apple's App Review process is multi-layered, combining computer automated and manual human review. Kosmynka TT. Every app and every app update approved to the App Store is reviewed by automated computer review and Apple employees who are experts in app review. Kosmynka TT; DX-3695 at -084. Apple's proprietary review tools leverage machine learning, heuristics, and data accumulated since Apple first launched the App Store in order to quickly extract large volumes of information about an app's potential issues and violations and present that information to a human reviewers. Kosmynka TT. This facilitates the expedient and accurate review of apps. Kosmynka TT.

120. Recognizing that computer tools and algorithms depend upon their input data, Apple's App Review process continuously incorporates and relies upon continuous updates of Apple's review tools, including by utilizing information learned through the review process. Apple relies on many proprietary tools and services for its robust App Review process. Kosmynka TT. [redacted]
The continual updating and training of Apple's machine learning and other App Review tools with such updated information is critical to the continued effectiveness of Apple's App Review Process. Kosmynka TT; Rubin TT.

121. In combination with hundreds of human experts, Apple uses computer automated review that includes meta data and asset analysis, static analysis, and dynamic analysis. Kosmynka TT. Static analysis consists of reviewing and analyzing the app and its binary code without executing it. Kosmynka TT. This is a first level approach to ferreting out impermissible aspects of software, such as the presence of links to malicious websites, pirated and/or cloned apps, and other known security concerns. Kosmynka TT. During dynamic analysis, the proposed app or app update is executed so that its behavior may be

analyzed, including to gain insights into its runtime signatures and operation and to assist in the discovery of potential violations of the Guidelines. Kosmynka TT. These automated analyses contribute to the review process, aiding in the discovery of potential violations of the App Store Review Guidelines and finding otherwise undetectable threats and inauthentic patterns across apps and developers. Kosmynka TT.

122. These automated processes are particularly useful for detecting certain security risks. Kosmynka TT. For example, computers are reasonably effective at identifying malware, private API usage, and potentially pirated software because they can work off an enormous corpus of data associated with identified threats, [redacted] and other data in order to check each app for known security and reliability threats and potential legal violations. Rubin TT. Consequently, when an app is submitted to App Review, [redacted]

123. Apple's proprietary computer automated tools also analyze an app's code and function calls (including obfuscated function calls). Kosmynka TT. [redacted]

124. Apple also uses automated processes to determine whether a submitted app calls private APIs. Kosmynka TT. Identifying such apps is another instance which computers outperform humans: While it is difficult for humans to keep track of which of the thousands of APIs on the iOS platform are private and public, computers can do so accurately and efficiently. Rubin TT. And automatic review is also used to flag potentially pirated applications. Kosmynka TT; Rubin TT.

125. [redacted]

126. Human review is the distinguishing component of Apple's App Review process. Kosmynka TT; Rubin TT. Every app and app update approved for distribution through the App Store is reviewed by Apple employees who are experts in app review. Kosmynka TT. The combination of human review with automated static and dynamic analysis using Apple's proprietary tools for every app and app update uniquely differentiates Apple's industry-leading process. Kosmynka TT; Rubin TT. Manual human review helps Apple detect malicious or otherwise problematic behavior and ensure compliance with the Guidelines with a much higher degree of accuracy than an automated analysis alone. Kosmynka TT; Rubin TT. Apple's extensive human review distinguishes the App Store

among digital marketplaces; no other digital marketplace offers as comprehensive a human review process. Rubin TT.

127. Human review is an early line of defense against new and emerging threats to the iOS platform. Rubin TT.

128. While automation is valuable at collecting information relating to potential threats, as well as detecting known threats through pattern recognition, automated processes are far less capable of detecting new issues and threats. Kosmynka TT; Rubin TT. These processes rely upon, but are fundamentally limited by, their use of heuristics. Kosmynka TT; Rubin TT. Heuristics are well-suited for performing repetitive analysis and detecting already-known malicious or otherwise problematic behavior. Kosmynka TT; Rubin TT. However, because heuristics rely upon humans to develop them, they are less able to detect new types of issues and attacks not seen before. Kosmynka TT; Rubin TT. Automation relying upon heuristics also typically face challenges when attempting to detect [redacted] Kosmynka TT; Rubin TT. Automated processes alone are also less able to detect hidden, dormant, or undocumented features—prohibited by the App Store Review Guidelines. Kosmynka TT; Rubin TT.

129. By contrast, human reviewers, using the information collected by the automated tools, can more effectively identify new or previously unknown types of user-unfriendly behavior, hidden or undocumented features, and other potential guideline violations, as well as their impact upon safety, security, privacy, and reliability. Rubin TT. Certain determinations can only be made by a human. Rubin TT. For example, a human reviewer is better positioned to determine whether a list of entitlements requested for an app is reasonable or whether it betrays a malicious or generally negative ulterior motive. By way of example, a human reviewer is better positioned to confirm that a calculator app's request for access to the camera betrays an ulterior motive. Rubin TT. Human reviewers also are better positioned to assess whether user-generated content flagged by automated tools for review is offensive, violates restrictions on content in apps for children, constitutes false or misleading content, or seeks information in violation of privacy guidelines. Rubin TT. And as Mr. Sweeney acknowledged, human reviewers can be used to ensure that the game works, it can be installed, and is generally compatible with the tested hardware. Sweeney TT.

130. Human reviewers also assist developers in resolving issues more efficiently. Kosmynka TT. Apple's human App Review team are committed to working with app developers to assess and resolve potential issues, which in some cases provides for a more straightforward identification and resolution of problems. Kosmynka TT. Human reviewers are also able to notify and work with Apple's security and platform teams to take actions to investigate issues relating to such potential threats. Kosmynka TT.

131. Human review leverages Apple's internal expertise. Kosmynka TT. In addition to training Apple's proprietary machine learning App Review tools with the growing body of app review-related data, Apple's App Review team is uniquely positioned to conduct manual review by using their built-up knowledge from App Review as well as their knowledge of

and integration into the development of Apple's iOS hardware and software. Kosmynka TT. Apple, for example, develops subject-specific App Review teams to address unique issues. Kosmynka TT. And Apple can merge these groups as new, cross-cutting problems emerge. Kosmynka TT. For example, Apple formed the App Store Improvements Team—a group to ferret out certain forms of spam—by merging members of the App Review Misleading Fraud team and App Review Compliance team. Kosmynka TT.

132. Apple therefore uses—indeed, pioneered—robust manual review in the app review process, involving close to 500 Apple employees deployed across the globe. Kosmynka TT; Schiller TT.

133. App review results in the rejection of about 40% of submitted apps. Kosmynka TT. Most of these rejections prevent apps that have software glitches or bugs, or that would compromise users' data privacy or security. Cook TT; Kosmynka TT. In 2020 alone, Apple rejected over 150,000 app submissions for violating its privacy guidelines. Kosmynka TT.

134. Rejections also protect developers, such as when Apple rejects a low-quality copycat app. DX-4463 at -888 (Epic celebrating Apple's rejection of "Fortcraft," a *Fortnite* copycat). This curation works to all developers' ultimate benefit: By instilling confidence in consumers that they can trust the apps available on the App store, Apple makes it more likely that iOS users will use (and pay for) the apps developers make available on the App Store. Schiller TT; Kosmynka TT.

135. Apple has improved its processes over time, making it both faster and more effective. Kosmynka TT. In late 2010, for example, Apple reviewed about 200,000 apps a quarter, completing reviews of 71% of new app submissions and 84% of app updates within a week of their submission. DX-4593 at -201. Apple then made this "[a]n area that we're heavily focusing on." DX-4526 at -878. As of March 2020, Apple was reviewing between 70,000 and 115,000 apps and app updates every week, completing 84.9% within 24 hours and 94.4% within 48 hours. DX-4214 at -710; Kosmynka TT.

136. While Apple's app review processes do not prevent the distribution of every low-quality app, Apple continues to innovate and improve its technology, practices, and processes. Kosmynka TT. Professor Rubin concludes that Apple's app review processes profoundly contribute to iOS app security. Rubin TT.

137. Apple employees also use their knowledge and expertise to continually improve app review tools as well as the safety, security, and trustworthiness of the iOS platform. Kosmynka TT. Much of the software that Apple uses during App Review were created internally, and as Apple learns about new threats to the iOS ecosystem, it will update its review software, its hardware, and/or its software to combat those new threats. Kosmynka TT; Federighi TT.

E. Apple continues to protect consumer privacy and security after apps are published.

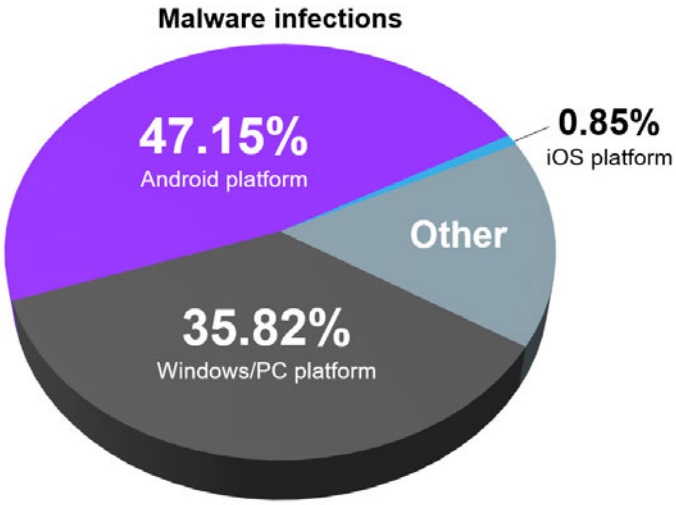
138. Apple's fraud engineering, algorithms, and risk team ("fraud engineering" team) seeks to protect consumers from fraud, malware, and other threats. Gray TT; Federighi TT. For

instance, this group monitors developer behavior to combat any attempt to engage in fraud or otherwise compromise users' private information. Gray TT; Federighi TT. This group also monitors developers to ensure that they are not engaged in money laundering or other illicit behaviors. Kosmynka TT; Gray TT; Federighi TT. In performing its role, the fraud engineering team works with the App Review team on an at least weekly basis. Gray TT; Federighi TT.

139. Apple also takes other measures to protect user privacy with respect to existing apps, such as by requiring users to opt in before sharing data and implementing differential privacy, which allows Apple to analyze de-individuated data. Rubin TT. Apple also spends [redacted] of dollars on manual reviewers and technical investigations team engineers. Kosmynka TT; Rubin TT. And it has a number of tools in place to detect malware on existing apps that it runs at periodic intervals to capture content at different times. Rubin TT. In addition, Apple freezes or terminates the accounts of developers who flout Apple's guidelines. Rubin TT.

140. Apple's stance on privacy as a human right gives its users trust that allows Apple to facilitate efforts that benefit society, such as Privacy-Preserving Contact Tracing as well as the use of privacy nutrition labels that provide visibility into how apps treat user data. Federighi TT; *see also infra* § VII.C (discussing Privacy Nutrition Labels). In many instances, large developers, such as Facebook, have publicly objected to Apple's privacy initiatives; Apple has nevertheless taken a firm stance on its privacy principles. Cook TT.

141. As a result of the App Review efforts and Apple's subsequent processes, there is a significantly smaller number of malicious iOS apps than those available on Android. In 2018, the iPhone platform accounted for just 0.85% of malware infections. DX-3141 at 15. By contrast, Android accounted for 47.15% and Windows/PC accounted for 35.82%. *Id.*



Among app stores, Android app stores have significantly higher numbers of malicious apps than the App Store. DX-4401 at 3–4; DX-4934 at 8.

F. Over time, Google has been tightening its app screening process and moving to a system that is more similar to Apple's.

142. Recognizing the superiority of the iOS experience for consumers and developers, Google has moved from conducting no app review, to a purely automated review, to utilizing human reviewers as well. By 2015, Google Play revised their app review system, and it later increased review times for new developers in 2019. Rubin TT.

143. Given Apple's superior security performance, Google is gradually adopting more restrictive security policies similar to those in Apple's Review Guidelines. Rubin TT.

VII. THE APP STORE RESULTED IN SIGNIFICANT IMPROVEMENTS IN APP DISTRIBUTION, INCLUDING GAME APP DISTRIBUTION.

A. Before the App Store, distributing video games and other software was expensive and difficult, particularly for small developers.

144. Before the App Store was launched, many challenges confronted developers who wanted to get their software—including games—to consumers. Schiller TT; Schmalensee TT.

145. In the 1980s and 1990s, games were often sold in disk form through retailers like Gamestop. DX-3710 at -729; Allison depo. at 40:7–41:19; Lafontaine TT.

146. For developers, software distribution was a resource-intensive effort that often required robust marketing campaigns and retailer relationships. Schmalensee TT. Developers had to make physical copies of their master copy or contract with publishers to do so. Schiller TT. They also had to undertake similar efforts to design manuals and shrink wrap and assemble the package to be shipped to the distributor. Schiller TT.

147. Oftentimes, financing the packaging, advertising, and marketing of software was extremely expensive. Schiller TT.

148. Before digital game transaction platforms, consumers also faced frictions—including a limited, expensive selection of game software that, to purchase and play, they had to drive to the store, find it on the shelf, buy it in the shrink-wrapped box, and load it up onto their device. Schiller TT; Cook TT. This process would then need to be repeated to purchase the same game a second time when a new generation of the console was released which was not compatible with the prior version's game hardware (or purchase updated software for your existing console or PC). Schiller TT.

149. This was Mr. Sweeney's own experience. He had found it difficult to sell games through traditional retail channels in the early 1990s. Sweeney TT. "[T]he whole business was so daunting." DX-3236 at -496. "See, you put a huge amount of effort into developing a program. If you have to release it, then that's basically doubling the effort, because of all the polish and documentation that's needed. And unless you're going to make serious money from that, then it's not worth it." *Id.*

150. When Epic agreed to distribute other developers' games around 1996, it collected a 60% commission—which Mr. Sweeney characterized as a fairly favorable royalty for developers. Sweeney TT. Most distributors at the time charged at least a 70% commission. Sweeney TT; Schmalensee TT.

151. By 2006, just before the launch of the App Store, developers often continued to receive 30% or less of the revenue from sales of their software. Sweeney TT.

B. The App Store upended the status quo.

152. The App Store was conceived "as a frictionless marketing, distribution and transaction system for both the developer and the user." DX-5315 at -245; Schiller TT. As described above, Apple equipped developers with powerful tools to build their apps. Schiller TT; *see also supra* § III. And developers then only had to submit their apps to Apple, which took care of the rest—including marketing, distribution, billing, and taxes. Schiller TT; *see also supra* § VI.

153. The App Store helped turn the prior revenue model on its head. Schiller TT. Whereas game developers had previously earned 30% or less of revenue, the commission collected by Apple was, at most, 30% of the transaction price. Schiller TT. First implemented by Steam a few years prior, this "70/30 split was a breakthrough." DX-4062 at -523.

154. As a result, many developers went from paying 70% of their revenue for publishing, distribution, marketing, and access to customers, to only paying 30% for the same services. Schiller TT. The App Store cut commissions essentially in half for paid games compared to traditional retail channels. Cook TT. What is more, most transactions incurred no commission at all. Schiller TT.

155. The deals negotiated by game developers before the App Store were generally much inferior to the revenue-sharing model that Apple introduced with the App Store. Sweeney TT.

156. By providing developers far and wide with not only this new platform but also equipping them with the tools to use it, the App Store had a democratizing effect. Schiller TT. Prior to the App Store, developers were typically large companies. Schiller TT. The App Store—and tools Apple made available to developers—enabled smaller developers to compete. Schiller TT. The "App Store democracy" created an environment in which everyone has equal opportunity to find success and prosper. Schiller TT.

157. Mr. Sweeney correctly predicted that "[o]ver the next decade, iPhone and iPad games will grow from being fun diversions built on shoestring budgets to world-class entertainment experiences." DX-4620 at -929.

158. Consumers also benefitted. The App Store provided a new, seamless, secure transaction platform through which they could obtain mobile apps on iPhones. Cook TT; Schiller TT. Game transactions on the App Store generally were generally cheap (and often free)—unlike most other game transactions at the time. Schiller TT. As Steve Jobs summed up, "[o]n the Nintendo and Sony, the average game title, at the street level, costs $30. Our

average game title's less than 10, some are free. It's delivered instantly right on your device, which of course is not the case with these other guys." DX-5315 at 249.

C. Apple has reduced its commission and the scope of transactions to which it applies.

159. Following the introduction of IAP in 2009, Apple charged a 30% commission on two specific types of digital transactions on the App Store: Paid downloads and in-app purchases of digital services or content. Schiller TT. Apple has never charged a commission on free downloads or the in-app provision of free digital services or content. Schiller TT. Apple also does not charge a commission on physical goods or services purchased through an app or on revenues made from in-app advertising. Schiller TT.

160. Over time, Apple has reduced or eliminated the commission on certain kinds of transactions for certain categories of apps. Schiller TT; Hitt TT.

161. Apple introduced a reduced commission structure for subscriptions in 2016. Schiller TT.

161.1 Apple had introduced subscriptions in February 2011, allowing developers to use IAP for recurring purchases. Schiller TT; Gray TT; DX-3060. At the time, these subscription purchases were subject to the standard 30% commission. Schiller TT. This commission applied each time the subscription was renewed. Schiller TT. For an annual subscription, for example, the developer paid Apple a 30% commission on the annual subscription charge. Schiller TT.

161.2 In 2016, Apple lowered the commission on subscription renewals. Schiller TT; DX-3256 at -346; DX-4632 at -076. Specifically, Apple amended the DPLA to charge only a 15% commission on subscription charges after the first year to 15%. Schiller TT; DX-3256 at -346; DX-4632 at -076.

162. The Video Partner Program, also started in 2016, is another example in which Apple reduced the commission charged on certain transactions. Schiller TT; DX-3421. This program applies to premium subscription video providers who integrate their services into the Apple TV app. Schiller TT; DX-3421. Those providers then pay only a 15% commission to Apple when users make an in-app purchase of a subscription to their content streaming. Schiller TT; DX-3421.

163. In 2011, Apple implemented the "reader rule." DX-3115. This rule permitted developers to create apps that allowed users "to access previously purchased content or content subscriptions," like "magazines, newspapers, books, audio, music, [and] video," so long as the developer did not "directly or indirectly target iOS users to use a purchasing method other than in-app purchase," and its "general communications about other purchasing methods are not designed to discourage use of in-app purchase." DX-3695 at -095.

164. For instance, under the reader rule, Netflix and Hulu could permit users to watch video content in the app based on a video subscription that had been purchased on a user's computer. DX-3363. Many large developers, including Spotify, Netflix, and Amazon (for the Kindle app), deactivated the in-app subscription option altogether in light of the rule. Schiller TT.

165. In 2018, Apple also clarified its policy for apps that operate services across multiple platforms. Schiller TT.

165.1 Apple's "cross-platform rule" allows users of apps that operate across multiple platforms to access content, subscriptions, or features they have acquired in an app on other platforms or a web site, including consumable items in multi-platform games, provided those items are also available as in-app purchases within the app. Schiller TT; DX-3695 at -093–96 (Sections 3.1.1 & 3.1.3). Consistent with its "user first" mentality, Apple prioritizes making sure that cross-platform game apps "work properly" the way that users would expect. Schiller TT.

165.2 For example, a user on an Android device could download Microsoft's Minecraft using the Google Play Store and then download Minecraft again on the App Store and play using the same Minecraft user account without losing any in-game progress or needing to repurchase in-game items. Schiller TT; DX-3796 at -513–14 (Mr. Schiller: "If users play Minecraft on for example the PC, and purchase goods there, and then run Minecraft on iOS or Apple TV with the same log on they would expect those goods to be there as well. . . . this is a big deal."). Apple receives no commission on paid content purchased through other platforms. Schiller TT.

165.3 [redacted] For example, an iPhone user can easily purchase V-Bucks from Epic's website using the iPhone's Safari or Chrome browsers (a transaction which would result in no commission to Apple) and spend them on the Xbox. Schiller TT.

165.4 Also unlike certain consoles, Apple does not require price parity; that is, developers are free to price their in-app content on apps downloaded from the App Store higher than the same content sold through other platforms. Schiller TT. [redacted]

166. Most recently, Apple launched its App Store small business program. DX-4168. This was another "industry-leading new developer program to accelerate innovation and help small businesses and independent developers propel their businesses forward." DX-4096 at -700. To that end, the program reduced the commission rate to 15% for many smaller app developers. *Id.*; Schiller TT. Earlier this year, Google followed suit, announcing a similar reduction in commission rates for *all* app developers, charging 15% commission on the first $1 million of revenue per year, and then 30% after that, resetting every year. DX-4924.

167. Apple has never increased its commission on paid downloads or in-app purchases, nor has it increased the $99 annual fee charged to developers who wish to distribute apps through the App Store. Schiller TT.

VIII. CONSUMERS AND DEVELOPERS HAVE BENEFITTED FROM APPLE'S CONTINUOUS INVESTMENT AND INNOVATION

168. Apple has continued to invest in improvements that directly or indirectly enhance the App Store experience for developers and consumers alike. Schiller TT; Federighi TT; Cook TT.

169. This investment has been significant. Schmid TT. Indeed, Apple spent over $100 billion in research and development since 2005, including billions in software, hardware, services, and other tools related to the App Store. Schiller TT; Malackowski TT. As a result, Apple has continued to iterate on and grow these features year after year. Schmid TT.

170. As a result, Apple's devices, software, and platform outperform its peers. Cook TT; Schiller TT; Federighi TT. Even Mr. Sweeney acknowledged that he loved the iPhone's aesthetic and liked most of the versions of its hardware as well as most of the aspects of its operating system. Sweeney TT. Outside of litigation, his colleagues were less coy: "Android performance is very poor compared to iOS." DX-4659 at -345.

A. Apple has relentlessly invested in software, hardware, and integration innovations.

171. Among the major technical innovations introduced by Apple in early iPhones was a built-in accelerometer. Schiller TT; DX-5335 at 1. The accelerometer was embedded in the first iPhone's design—among the first smartphones to do so. Schiller TT. The accelerometer measured changes in velocity along three axes. Schiller TT. Among other things, this allowed users to appreciate games (and other features) in the viewing format best suited for the content displayed on screen. Schiller TT.

172. Apple rolled out two more major innovations the next year. As discussed above, Apple introduced IAP—a key innovation that enabled developers to adopt new business models involving the delivery of digital content. *See supra* § III.F. Apple also introduced Push Notification Service. Schiller TT; DX-5335 at 2. This allowed apps to send users a message when something changed in the apps, which allows developers to give various prompts to users and allows users to be reminded about important developments in their apps (rather than having to constantly open and check the apps). Federighi TT.

173. In 2010, Apple introduced gyroscope hardware—the first smartphone manufacturer to do so. Schiller TT; DX-5335 at 3. Gyroscope is a motion sensor embedded in Apple's mobile devices that can sense motion on three axes and works with the accelerometer to capture information about the device's position. Schiller TT. This allowed developers to build new features into apps, providing iOS users with more complex apps. Schiller TT.

174. That same year, Apple also introduced the Retina Display, which improved screen resolution, making individual pixels unperceivable to the average human eye at a distance of 12 inches. Schiller TT; DX-5335 at 4. In subsequent years, Apple would continue to expand the iPhone display size, and also eliminate the home button, further increasing the usable footprint of the screen and improving user-interface options for app developers. Schiller TT.

175. In 2013, Apple introduced new significant features—App Store Updates and Touch ID—and vastly improved iPhone hardware. Federighi TT; DX-5335 at 5.

175.1 App Store Updates is a feature—introduced with iOS 7—that automatically updated apps and made app suggestions based on one's location. Federighi TT. This made it easier for users to maintain apps, reducing fragmentation challenges (i.e., issues that arise when users do not download new versions of apps) for developers. Federighi TT.

175.2 Touch ID is a sensor that reads fingerprints. Federighi TT. This technology "makes secure access to the device faster and easier." DX-3561 at -314. And by eliminating the need to input one's password to unlock the phone or make a purchase (in-app or otherwise), Touch ID also incentivizes users to use longer, more complex passwords. *Id.*; Federighi TT.

175.3 The biometric scanner for Touch ID was only one of many hardware improvements Apple introduced at the time. Federighi TT. Inside its new devices, Apple deployed A7 SoC 64-Bit Technology. Federighi TT. This enabled game apps to be developed and run using 64-bit technology/processing—effectively *doubling* the graphics performance from prior chips. Federighi TT. When Epic Games demoed *Infinity Blade 3* using this hardware at an Apple Special Event in 2013, it praised the iPhones's ability to "load[] almost instantly . . . each of these complex environments." DX-3147 (Donald Mustard at 00:38:38).

176. Yet again, in 2014, Apple introduced more innovative features, including App Bundles, which allowed developers to sell multiple apps together at a discounted price. Schiller TT; DX __ Hitt App'x F. For example, a game series—like Epic's Infinity Blade Trilogy—could be (and was) offered as a bundle, allowing consumers to buy all three titles together at a discount. Schiller TT. Additionally, Apple introduced a related "complete my bundle" feature that gave consumers a discount on other titles in the bundle if they had already purchased one or more of the bundled apps individually. Schiller TT.

177. In 2015, as part of the iOS9 update, developers got access to three new gaming SDKs: GameplayKit (which helps create artificial intelligence), Model I/O (which helps to light 3D models), and ReplayKit (which lets users record and share gameplay). Schiller TT; DX-5335 at 11. That same year, Apple released the Taptic Engine, which is Apple's mechanism for haptic feedback on the iPhone. Schiller TT. Haptic feedback recreates a sense of touch or movement using a motor that emits different levels of vibration power and sensations. Schiller TT.

178. In 2016, the iPhone 7 was upgraded with stereo speakers, with speakers on both the top and bottom of the phone, amplifing audio twice as loud as the iPhone 6s and providing dynamic range for better sound quality. Schiller TT; DX-5335 at 6.

179. In 2018, Apple launched Face ID, which increased the security of Apple products by allowing users to lock their devices using a scan of their face rather than the less secure fingerprint. Federighi TT. Consumers could now use Face ID to make secure in-app

purchases. Hitt TT; DX-5335 at 16. Related to the same advances in facial scanning technology, Apple also launched Memoji in 2018, allowing users to create a virtual version of themselves which, through facial recognition, could mimic the users' actual head, eye, mouth, and even tongue movement. Federighi TT.

180. Apple unveiled a series of hardware and software upgrades in 2019, including download improvements as well as Screen Time Controls, Digital Wellness, and Dark Mode. Schiller TT; DX-5335 at 6, . Apple made major improvements to iOS that made app downloads 50% smaller and app updates 60% smaller. Federighi TT. Because app size can be a key restriction for developers, this vastly expanded the scope of features that developers could include in apps, including game apps. Federighi TT.

181. In the last year, Apple has continued to roll out new improvements, including LiDAR and M1 ARM Chips. Federighi TT; DX-5335 at 7.

181.1 In 2020, Apple introduced LiDAR (Light Detection and Ranging) for certain iPhones. Schiller TT. This built upon existing smartphone technology by improving the range of scanning technology, improving the quality of photos, and enabling sharper augmented reality (including for augmented reality game apps). Schiller TT.

181.2 Apple recently started a transition to using in-house ARM chips—already used in its mobile devices and tablets—for all Mac personal computers. Schiller TT. This will allow consumers to run all iOS, iPadOS, and MacOS applications on any Mac. This innovation may lead to even easier substitution between apps written for Macs and iOS, increasing the value of app transactions for consumers and potentially broadening the audience developers can reach (without increasing cost). Schiller TT.

182. Apple's iPhone hardware has kept pace with these newest software innovations. Schiller TT; DX-5335 at 7. The iPhone 12, released in October 2020, uses an advanced CPU with improved machine learning capabilities. Schiller TT. This accelerates the device's performance and energy efficiency. Schiller TT. Along with a larger screen, the iPhone 12 Pro Max is an extremely capable gaming device—comparable in terms of latency, responsiveness, and graphics to all but the most advanced gaming PCs. Schiller TT. As Mr. Sweeney said, the iPhone remains a premium product to this day. Sweeney TT. This has allowed developers to take full advantage of software innovations and deliver ever more sophisticated and higher-quality apps. Schiller TT.

183. In addition to these numerous improvements, Apple has continually adapted the App Store to ensure it works on new devices, including the iPad, Apple Watch, and Apple TV. Schiller TT. This allows more iOS users to access apps, and those with more than one iOS device to work more seamlessly between their devices. Schiller TT. It also allows developers to reach consumers across a wide variety of devices without incurring significant additional development costs. Schiller TT.

184. This partial list includes only some of the major features and functionalities Apple has added since it introduced the first iPhone. Schiller TT; DX-5335 at 1–19. All in, Apple has made thousands of hardware, software, and firmware improvements to the iOS ecosystem. Schiller TT. In this respect as in others, Apple has shown itself to be a relentless innovator. Schiller TT; Cook TT.

B. Apple has relentlessly invested in new developer tools, and improvements to existing tools.

185. Apple has developed an extensive array of tools that it licenses to app developers. Schiller TT; Federighi TT; Malackowski TT.

186. Apple includes an ever-increasing assortment of innovative app development tools in the SDK. Federighi TT. As noted above, Apple invested substantial resources in creating a state-of-the-art SDK in advance of the App Store's launch. *See supra* § III.D.

187. Apple releases new, expanded SDKs with each major release of iOS—*e.g.*, iOS 2.0, iOS 3.0, and so on (as opposed to minor updates denominated iOS 2.1, 2.2, 2.3, etc.). Schiller TT; Federighi TT. These SDKs help developers take advantage of new technologies and features of iOS and Apple's mobile devices. Federighi TT; Kosmynka TT. Each SDK typically features *thousands* of new APIs and *hundreds* of new features. Federighi TT.

188. With iOS 5.0's release in 2010, for example, Apple introduced Game Center—a social gaming network—and a set of tools called GameKit that allowed developers to implement Game Center's features in their apps. Federighi TT. Game Center offered significant improvements to the player experience in game apps: Users could now purchase and download games directly from Game Center rather than having to go to the App Store, and they could also personalize their profiles, display achievement points earned across games, and compare their own achievement points to that of their social network. Federighi TT. Indeed, Epic's Infinity Blade was among the first game apps to integrate GameKit features. Hitt TT; DX-5335 at 9.

189. When Apple released iOS 6.0 in 2012, it not only unveiled new hardware improvements—a 5.4-inch display on new iPhones that allowed users to play games on a wider, taller screen—but also released many new APIs to help game publishers drive customer acquisition. Federighi TT. These included Game Center Challenges, which enabled iPhone users to invite friends to beat their leaderboard times or points. Federighi TT. And new APIs allowed developers to use Game Center to send push notifications to players as they competed with each other. Federighi TT.

190. The next year, Apple introduced Sprite Kit. Sprite Kit is a powerful graphics framework ready-made for developing 2D action games, platform games, and puzzle games. Schiller TT. It included built-in physics support and greatly simplified the process of developing these types of games. Schiller TT.

191. In 2014, Apple provided developers with the iOS 8 SDK, which included more than 4,000 new APIs. DX-4302; Federighi TT. Among the tools in this SDK was Metal—a particularly potent developer tool. Federighi TT; Schiller TT.

191.1 Metal is a powerful computer graphics API. Federighi TT; Schiller TT. It was a vast improvement over its predecessor, providing *ten times* the computing power. Federighi TT; Schiller TT. By Epic's admission, Metal is "fast, agile, [and] feature-rich," Penwarden depo. at 67:9–68:8, and "bl[ew] away" competitors "in every way," DX-3098 at -599. It also eliminated the "huge amount of overhead" (excess computing time) imposed by older graphics APIs. DX-4653 at 3 (quoting Sweeney). This allowed developers to create more complex and visually compelling content—particularly important for game apps. Federighi TT.

191.2 Indeed, Mr. Sweeney said in June 2014 that "[w]e're happy to see Apple leading the way with mobile devices. [The older graphics API] is the bane of our existence there, because it not only has a lot of overhead, but it has all that overhead on the platform where you can least afford it. You have these small devices which are limited by their power consumption and heat generation. The more efficiency you can get out of the graphics API, the more you can do as far as immediate improvements in graphics quality." DX-4653 at 3.

191.3 *Fortnite* takes advantage of Metal's powerful capabilities. Epic's VP of Engineering, Nicholas Penwarden, testified that "working with Metal [was] a dream" compared to the tools then available on Android. Penwarden depo. at 63:9-13. "[G]etting *Fortnite* running on iOS using Metal was a very positive experience and, again, easier than the experience we had on Android platforms." Penwarden depo at 62:16-19. Metal was "the number one differentiator that allowed [Epic] to get Battle Royale running on iOS faster than on Android." Penwarden depo. at 66:13-21.

192. After Apple acquired TestFlight (a mobile app testing system) in 2014, Apple added key features to it (such as allowing multiple versions of an app to be tested simultaneously), and then integrated it into its suite of iOS development tools. Schiller TT. This provided developers with a controlled environment in which they could test and refine their apps. Federighi TT; Schmid TT. And a survey showed that by 2015 73% of large developers already were using TestFlight and another 11% intended to do so. DX-3800 at -769–70.

193. In 2017, Apple provided developers with ARKit. Schiller TT; Federighi TT.

193.1 ARKit is a free set of tools for developers to create augmented reality (AR) apps and features. Schiller TT; Federighi TT. Prior to ARKit, developers were able to program AR features for their apps only by building (or buying) the constituent parts from scratch. Schiller TT; Federighi TT. These include, for example, detecting horizontal surfaces where objects can be placed, or how light and shadows move when objects are placed into a space. Schiller TT; Federighi TT. ARKit simplifies the process by providing predesigned packages able to handle these and other components of generating an AR. Schiller TT; Federighi TT.

193.2 As Apple continued to improve ARKit, Epic acknowledged internally that its capabilities were industry-leading. DX-4908 at -107 ("Two of the most impressive features (human occlusion of CG and live mocap) are powered by tech in the new

version of ARKit and were described as 'exclusive to iOS.'"); *see also* DX-3556 at -585 (Epic employees remarking "Sweet!" and "Awesome news" when another employee reports that he "found the hardware accelerated HEVC apis that iOS devices support. This means the AR streaming thing I did can be hardware encoded/decoded on iDevices to/from Mac/PC.").

194. In 2019, Apple improved its suite of AR tools with Reality Kit and Reality Composer. RealityKit is a simpler version of AR Kit for less experienced developers. Schiller TT; Federighi TT. Reality Composer is a new utility app that allows designers to edit AR scenes, animations and events from Mac and iOS devices. Schiller TT; Federighi TT. These tools enabled more developers to create AR apps with better features but fewer resources. Schiller TT; Federighi TT.

195. Most recently, Apple released another new SDK with the launch of iOS 14. Federighi TT. This included the WidgetKit framework. Federighi TT. Developers can use this technology to create widgets for their apps that display information directly on the iOS Home screen. DX-4939; Federighi TT.

196. To date, Apple has created and made available more than 150,000 APIs. Schiller TT; Malackowski TT. It also has continually improved the APIs, rolling out updates, fixes, and new versions of many APIs in successive SDKs. Schiller TT; Federighi TT. For instance, in 2019, Apple enabled support for third-party controllers to be used in iOS games. Hitt TT.

197. As a result—and by Epic's own admission—Apple's APIs are superior to Android's. Penwarden depo. at 69:8–70:9. Indeed, the breadth, depth, and quality of Apple's APIs allowed Epic to launch *Fortnite* faster on iOS than Android. Penwarden depo. at 70:3-9.

198. On top of all this, Apple also created Swift in 2014, an open-source, easy-to-learn, general-purpose language, built specifically using a modern approach to safety, performance, and software design patterns. Federighi TT. This allowed developers to program iOS faster than they had been able to do with previous languages. Federighi TT; Hitt TT; DX-5335 at 10. And because it was a simple, open-source language, developers could more easily learn, adopt, and implement safety features. Federighi TT; Hitt TT. And it became popular: By 2019, the Microsoft Outlook, Hulu, Tinder, Postmates, and Walmart apps, among others, were written, at least in significant portion, with Swift. Federighi TT; Hitt TT.

199. In addition to these technologies and services, Apple also spearheaded several programs to benefit the developer community and, consequently, enhance the broader ecosystem. Schiller TT.

199.1 For example, developers were able to announce and demonstrate new products and features at Apple's Worldwide Developer Conference ("WWDC"). Grant TT. Indeed, Epic has given numerous presentations and demonstrated its products, including *Fortnite* and Infinity Blade, at WWDC and Apple media events. DX-3963; DX-3123; DX-3630.

199.2 Apple also offers a consultation labs program, including opportunities for developers to book slots with representatives of certain features at WWDC. Grant TT. Consultations are also available when Apple releases new hardware or software features. Grant TT.

199.3 Another example is Apple's 2016 launch of "Everyone Can Code," a program that helps nurture the next generation of developers by investing in coding education for students. Schiller TT. Similarly, in 2018, Apple launched the Entrepreneur Camp, designed to create new opportunities for app-driven businesses owned or led by women through an intensive technology lab, specialized support, and ongoing mentoring. Schiller TT. And Apple also recently launched an Apple Developer Academy in Detroit, focused on "young Black entrepreneurs, creators, and coders" and offering training in iOS app development. Schiller TT.

199.4 These efforts are so pervasive that "being pro developer is part of Apple's brand." Grant TT.

C. Apple fiercely protects consumer privacy.

200. Consistent with its belief that privacy is a human right, Cook TT, Apple has made it a priority to implement a number of features and tools to provide better protection of iOS users' privacy. Schiller TT; Federighi TT.

201. In 2019, for example, Apple introduced "Sign in with Apple." Schiller TT. This feature allows users to securely log in to new apps in one click while also "hiding" their real email addresses from developers, reducing the ability of third-party sign-in services to track and share users' personal data. Schiller TT.

202. Also in 2019, Apple gave users the additional option to share their location with an app once (rather than always, never, or while using the app)—giving consumers greater control over their sensitive location information. Federighi TT.

203. In 2020, Apple gave users even greater control over their location information by allowing them to share only their *approximate* location with developers. Federighi TT. Apple also created an on-screen indicator to inform users when their microphone or camera were on—a feature previously available on laptops but not on smartphones (indeed, a feature that some Android some phones still do not have). Federighi TT.

204. Apple also ecently introduced "Privacy Nutrition Labels" in which developers must describe the privacy practices for each particular app on its App Store page. Federighi TT; DX-4398. This includes identifying all data the developer or its third-party partners collect (unless specified exceptions apply). Federighi TT; DX-4398. This allows users to "learn about some of the data types the app may collect, and whether that data is linked to them or used to track them." DX-4398 at 1.

205. In addition, Apple is implementing "App Tracking Transparency." Federighi TT. App Tracking Transparency will require apps to get the user's permission before tracking their data across apps or websites owned by other companies. Federighi TT. This will allow

users to make more informed choices about the apps they use and the permissions they grant to those apps, including whether to allow apps to track them. Federighi TT.

206. As a result of these and other innovations and policies, Apple has outpaced its competitors in protecting consumers' privacy. Federighi TT; Rubin TT. Mr. Sweeney, an iPhone user, said that he found Apple's approach to privacy superior to Google's approach to customer privacy and customer data. Sweeney TT. Indeed, "Apple does a great job," he said, "in terms of customer privacy." DX-3143 at -570. Apple is "not in the data business, "do[es not] want your data," and is "never in a position to profit from accessing or selling your private data"—a far "different position" than other large tech companies. *Id.*

D. Apple also continually improves the App Store storefront.

207. Since the App Store's 2008 launch, Apple has continually sought to improve the storefront's interface and capabilities—for the benefit of both developers and users. Schiller TT; Federighi TT.

208. For example, Apple redesigned the App Store in 2012 to replace the "Categories" tab with "Top Charts" and "Genius" tabs. Schiller TT. These offered personalized recommendations for iOS Applications. Schiller TT. This helped users to find apps they were most likely to enjoy; it helped connect developers with the customers most likely to purchase their products. Schiller TT.

209. Between 2014 and 2016, Apple made four significant improvements to the App Store relevant to game app developers and game app users experiences. Schiller TT. First, Apple optimized the App Store's search capabilities. Schiller TT. Second, Apple created App Previews, a feature that allowed developers to showcase up to three videos to potential players, and introduced the "Explore" tab, another discovery feature based on a user's past downloads, geographical location, and interests. Schiller TT. Third, for the first time, Apple allowed developers to sell game and app bundles. Schiller TT. Fourth, Apple introduced Search Result Ads, allowing developers to pay to promote their App when a user searched relevant keywords to a users' text input. Schiller TT. Each of these features improved user acquisition for game app developers and allowed users to find game apps they might be interested in more easily. Schiller TT.

210. In 2017, Apple overhauled the App Store's U.S. storefront. Schiller TT; DX-3642. This was a "ground up" redesign that "ma[de] discovering apps and games easier than ever before." DX-3642.

210.1 The redesign included five tabs: Today, Games, Apps, Updates, and Search. Schiller TT. These tabs improved the discoverability of apps. Schiller TT. For example, the "Today" tab featured exclusive premieres of new apps, news releases, recommended tips, and how-to guides that were updated daily by App Store's global team of editors. Schiller TT. To make navigation even easier, the redesign also added "Games" and "Apps" tabs to the App Store—allowing users to find game apps separately and more efficiently. Schiller TT. Both of these tabs include recommendations, hand-picked collections, and top charts. Schiller TT.

210.2 In addition, the redesign also made in-app purchases more discoverable by displaying them on an app's product page and in search results. Schiller TT. And Apple also added several new marketing and user-acquisition focused tools to the App Store: It enabled pre-orders of apps as well as subtitles (in the app store description) and subscription offer codes. Schiller TT; DX-4928.

210.3 A 2018 report concluded that the redesign was highly successful at helping consumers discover new apps and suggested "that iOS users are turning to the App Store and its editorial recommendations in greater numbers to learn about what new game to try next." DX-4949 at 2; Schiller TT.

210.4 Nor were these innovative interface improvements easily implemented. The redesign required a significant investment from Apple. Schiller TT.

211. Most recently, Apple has undertaken an enormous effort to cull from the App Store apps that "no longer function as intended, don't follow current review guidelines, or are outdated." DX-4917 at 1; Kosmynka TT. To that end, Apple is evaluating and removing apps in all categories on an ongoing basis. Kosmynka TT; DX-4917 at 1. Removing these apps has improved searchability, improving users' ability to find apps they want to download. Kosmynka TT.

IX. THE APP STORE'S BUSINESS MODEL HAS CONTRIBUTED TO THE RAPID PROLIFERATION OF APPS, INCLUDING GAME APPS

212. The App Store's business model helped lead to digital distribution becoming the prominent form of game distribution. Hitt TT; DX-3710 at -729, -736.

213. From the start, Apple's goal was "to get as many apps out in front of as many iPhone users as possible." DX-3177 at -075. Apple has done so by creating tremendous growth in every facet of app distribution: The number of developers creating game apps for iOS users, the number of consumers who use and enjoy those game apps, the number of game apps available on the App Store, the number of transactions of game apps, and the amount consumers have paid and developers have earned from those game app transactions. Cook TT; Schiller TT. In short, the App Store has enjoyed explosive growth, driven significantly by the positive indirect network effects between app developers and users. Schiller TT; Schmalensee TT.

A. The number of game app developers and users has dramatically increased.

214. As discussed above, the App Store reduced the barriers and costs associated with developing and distributing game apps. *See supra* § VII. As a result, developers flocked to the Apple ecosystem. Schiller TT; Cook TT. By the end of 2010, there were 213,000 members in the Apple Developer Program. DX-4593 at -191.

215. Drawn by the continual improvements to the App Store and Apple's developer tools, *see supra* § VIII, that growth continued year-over-year. Schiller TT; Cook TT. Today, there are [redacted] (and over 27 million registered iOS develeopers). Schiller TT.

216. There was similar growth among App Store customers. The App Store crossed 100 million cumulative App Store customers in 2010. DX-4593 at -209. That number ballooned to over 500 million in 2014. DX-3734 at -145. And by the end of 2015, there were 650 million customers who transacted on the App Store. DX-4526 at -834. That growth also has continued: Today there are almost 1 billion customers worldwide and over 500 million weekly store visitors. Schiller TT.

217. In Mr. Sweeney's understated words, the audience for apps is much larger now than the audience for PC and Shareware games was when he started. Sweeney TT.

B. The number of game apps available on the App Store has dramatically increased.

218. Alongside this growth in developers and consumers, the App Store has overseen an exponential proliferation in the availability of apps, including game apps. Schiller TT; Cook TT.

219. At launch, the App Store's U.S. storefront offered 452 third-party apps (131 of which were games) by 312 distinct developers. Hitt TT. In the App Store's first year, the number of available apps grew to over 75,000. DX-4608 at -034. This growth was particularly pronounced among "gaming and entertainment titles." *Id.*

220. The sheer volume of available apps made the App Store distinctive at this time. Hitt TT. In September 2009, users of Sony PSPs could access 607 game titles and users of Nintendo DS's could access 3,680 titles; iOS users had access to 21,178 game titles on the App Store. DX-4608 at -034. When the App Store crossed 185,000 total available apps in March 2010, Android marketplace only offered 30,000 and BlackBerry offered fewer than 6,000. Hitt TT.

221. This growth continued. By October 2010, there were over 300,000 apps available on the App Store. DX-4593 at -205; DX-3406 at -167. By 2014, there were over 1,000,000 apps on the App Store. DX-3734 at -147. By 2015, there were over 1.4 million apps available on the App Store. Malackowski TT. And by 2020, there were over 1.8 million apps available on the App Store. Malackowski TT. Games remain a significant share, with over 300,000 game apps available in the 2019 fiscal year. Hitt TT.

222. While the App Store generated growth in apps of every kind, free apps in particular became more prevalent. Schiller TT. At launch, about 32% of apps on the App Store were free. Hitt TT. As Epic acknowledges, Apple adopted pricing models for the App Store that stimulated the supply of free apps. Evans TT. As a result, developers shifted away from paid-to-download game apps toward free-to-download game apps (with or without in-app purchases). Schiller TT; Hitt TT.

223. In 2013, more game apps were completely free—meaning both free-to-download and offering no in-app purchases—than pay-to-download. Hitt TT. By the end of 2019, 66% of game apps were free-to-download and offered no in-app purchases and about 25% more were free-to-download with in-app purchases. Hitt TT. Users now have to pay to download less than 10% of game apps. Schiller TT; Hitt TT.

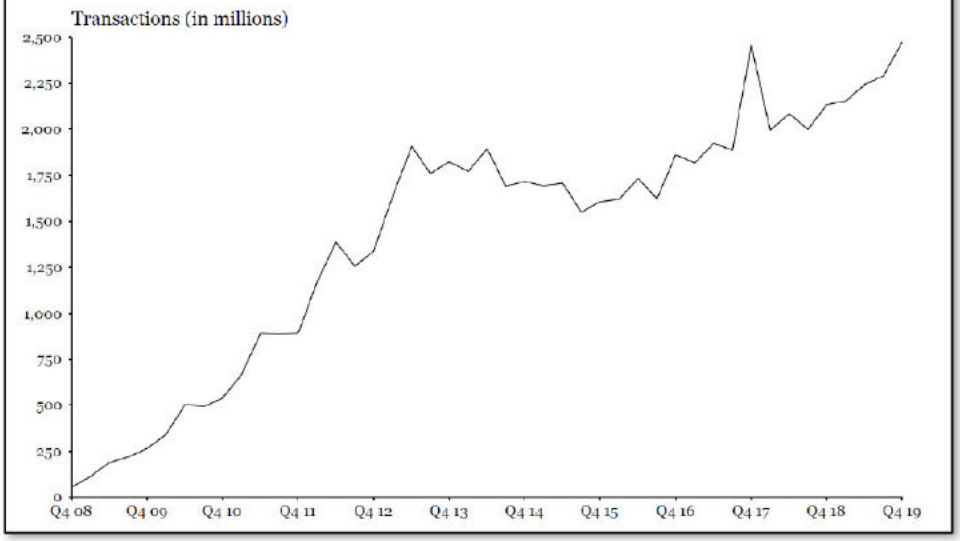
C. The number of game app transactions on the App Store, and amount of revenue generated from those transactions, have dramatically increased.

224. Similarly, the total number of digital game transactions on the App Store—and the revenues earned by developers on the App Store—have dramatically increased over time. Cook TT; Schiller TT; Hitt TT.

224.1 In the App Store's first year of operation, consumers made 603 million downloads of third-party apps. Hitt TT. Total downloads tripled by September 2009. DX-4608 at -027. By the end of the next year, the number of downloads had swelled to 7.8 billion. DX-4593 at -206. By the App Store's fifth birthday, it had crossed 50 billion app downloads. DX-3734 at -138. App downloads have continued to accelerate in the years since. Hitt TT.

224.2 The number of game app transactions—both downloads and in-app purchases—has grown in similar fashion. In the first year after the App Store's launch, there were approximately 250 million game app transactions. Hitt TT. By the 2013 fiscal year, the two top game apps generated 190 million downloads themselves (each beating out the Google Maps, Facebook, and Instagram apps). DX-3734 at 151. In the 2019 fiscal year, there were 2.52 billion initial downloads of, and in-app purchases in, game apps:

EXHIBIT 56
App Store initial downloads and in-app purchases (July 10, 2008–September 30, 2019)



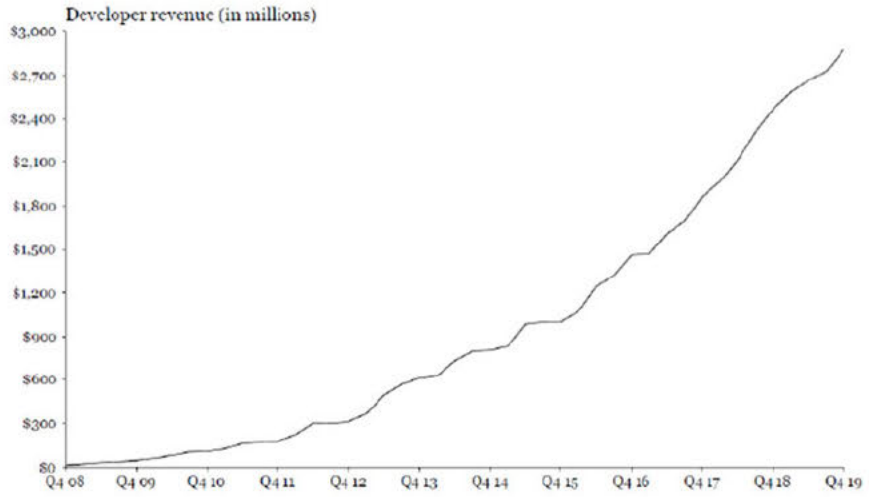
Hitt TT.

224.3 Since its inception, the App Store also has generated enormous revenue for developers. Cook TT; Schiller TT. In the App Store's first two years, developers

earned about $1.5 billion. DX-4593 at -208. Developers earned an additional $8.5 billion in the next three years. DX-3734 at -139. By 2016, $44 billion had been paid to developers. DX-4526 at -817.

224.4 This revenue trend has accelerated in the intervening years. Hitt TT. Empirical analysis of Apple's transactional data shows significant growth in net revenue for developers:

EXHIBIT 57
Developer revenue from App Store initial downloads and in-app purchases (July 10, 2008–September 30, 2019)

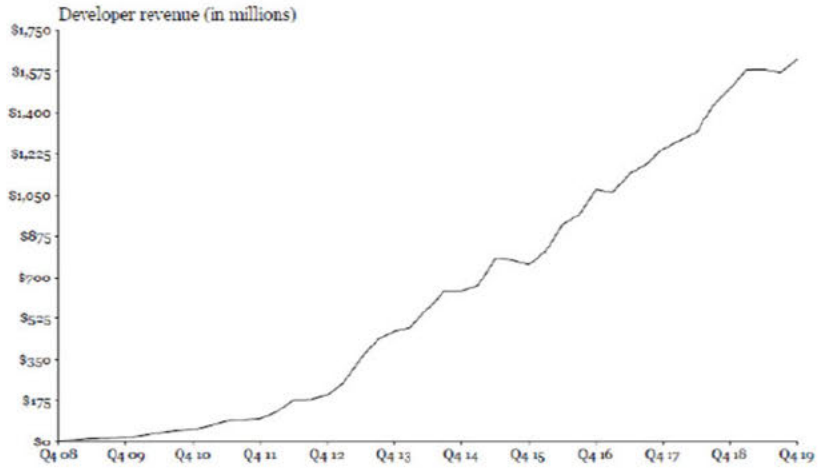


Source: Apple transaction data
Note: In the year following the App Store's launch (July 10, 2008), the transaction revenue for developers totaled $0.11 billion. In FY2019, the transaction revenue for developers totaled $10.85 billion. Apple's fiscal year begins in October, meaning Q4 starts in July and ends in September. For example, Q1 FY2008 begins in October 2007. Transactions where Apple is the developer are excluded. Revenue is developer revenue from in-app purchases and initial downloads. See Appendix E for details regarding Apple transaction data processing.

Id.

224.5 Game app developers have enjoyed the same revenue trend:

EXHIBIT 55
Developer revenue from App Store initial game downloads and in-app purchases (July 10, 2008–September 30, 2019)



Source: Apple transaction data
Note: In the year following the App Store's launch (July 10, 2008), the game transaction revenue for developers totaled $0.06 billion. In FY2019, the game transaction revenue for developers totaled $6.36 billion. Apple's fiscal year begins in October, meaning Q4 starts in July and ends in September. For example, Q1 FY2008 begins in October 2007. Only apps and in-app purchases categorized as games are included. Transactions where Apple is the developer are excluded. Revenue is developer revenue from in-app purchases and initial downloads. See Appendix E for details regarding Apple transaction data processing.

Hitt TT.

224.6 Thus, the App Store business model has helped power industry-wide growth—with revenue from digital game transactions growing at a compound rate of 24% annually. Hitt TT. Yet the total output of digital game transactions through the App Store has far outpaced the industry: While revenue from digital game transactions grew around 448% between 2010 and 2018, revenue from game app transactions on the App Store grew by **more than 2600%** during the same period. Hitt TT. [redacted]

225. Sales of iOS devices and other devices on which consumers perform digital game transactions have increased over time. Cook TT; Schiller TT; Hitt TT. For example, the number of iPhones sold in the U.S. has grown from [redacted] to [redacted] (in which Apple also sold [redacted]). Hitt TT. The total number of U.S. iPhone users has similarly grown from 44.5 million to 101.9 million between 2012 and 2018. DX-4626; Hitt TT.

D. The quality of game apps available on the App Store has improved.

226. Not only has the quantity of available apps grown, the quality of those apps also has improved. As discussed above, Apple's innovations have improved the ability of iOS mobile devices to run high-end game apps. *See supra* § VIII. These innovations have enabled high-end "AAA" games to run on iOS mobile devices. Schiller TT; Hitt TT.

Indeed, the App Store has long attracted the "hot title[s]" from "[l]eader[s] in the entertainment industry," including major developers like Ubisoft and Electronic Arts. DX-4608 at -034, -037. And many games that previously would have been available on consoles and PCs have been released—with great success—on the App Store. Schiller TT; Hitt TT. These games run the gamut, ranging from content creation games like Minecraft to tower-defense games, board-game adaptations, resource-management simulators, console game adaptations, and more. Hitt TT.

227. By every conceivable measure, Apple's business model succeeded in eliminating the major frictions that existed in the mobile phone business in the 2000s, driving explosive growth through positive feedbacks between developers and users. Cook TT; Schmalensee TT. And Apple has generated this output at rates far surpassing competitors, many of whom have fizzled out. Cook TT.

X. THE APP STORE COMPETES WITH OTHER PLATFORMS FOR GAME APP TRANSACTIONS

228. Every day, Apple competes against many rivals in many markets and is constantly pushing to improve Apple's devices, software, services, and other offerings. Cook TT. The App Store and iOS ecosystem are not exceptions. Cook TT.

A. The App Store launched in a marketplace that already contained numerous rivals.

229. The App Store competes in an increasingly crowded market of game app distribution platforms. Schiller TT. This includes at least four sources of competition for game app distribution: Online mobile app transaction platforms (e.g., Google Play); online transaction platforms focused on game distribution (e.g., Steam); developers' own stores that directly distribute their games (e.g., Epic Games Store); consoles (e.g., Sony PlayStation and Microsoft Xbox); and, most recently, streaming game services (e.g., Nvidia GeForce Now). Schiller TT.

230. Platforms for online distribution of apps began to emerge in the 1990s. Schiller TT. Among the first online platforms was Blizzard's Battle.net, an online store that sold Blizzard's own titles. Schiller TT; Schmalensee TT. Shortly thereafter, the first successful on-device platform for mobile devices, Handango Inhand, was launched for devices using the Symbian operating system. Schmalensee TT.

231. Steam, launched in 2003, was the first online platform focused on game distribution to gain major success. Sweeney TT; Schmalensee TT. Initially, Steam only facilitated distribution of games developed by Valve for Windows PCs, but, beginning in 2005, it began to facilitate distribution of games developed by other firms. Schmalensee TT. As the "[f]irst mover," Steam "pioneered digital distribution on PC" and enjoyed initial success in that endeavor. Allison depo. at 46:17–21, 47:20–48:5.

232. Other PC-focused digital distribution platforms followed on the heels of Steam's success. GameJolt, iPlay, Direct2Drive, Windows Marketplace, GamersGate, and Kongregate all launched between 2003 and 2007. Schmalensee TT. In addition, Microsoft launched Xbox Live Marketplace in 2005, Sony launched the PlayStation Store in 2006, and Nintendo

launched the Wii Shop Channel that same year. Schmalensee TT. Most of these platforms, like Steam, charged a 30% commission. Schmalensee TT.

233. Moreover, users could (and still can) access games through web applications on their web browser, such as Safari. *See supra* § III.B.

234. Thus, the App Store entered a marketplace with multiple established competitors and competing services. Schiller TT.

B. Competition for game app transactions has become more intense since the App Store's launch.

235. The marketplace for game app distribution has become more crowded since the App Store launched. Schiller TT. At least 22 other digital distribution platforms launched between 2008 and 2011. Schmalensee TT.

236. Among these, Google announced the Android Market in 2008 (which later became Google Play in 2012). Schiller TT; Schmalensee TT. Nokia and Samsung launched their Ovi Store and Galaxy Apps Store, respectively, the next year. Cook TT; Schmalensee TT. In 2011, Amazon launched its own app store—trying to copy many aspects of Apple's distribution process, DX-4529 at -497–98—and Nintendo launched its eShop for its 3DS device. Schmalensee TT.

237. Apple saw these app platforms as burgeoning competitors at the time. Cook TT; Schiller TT. In a 2011 email sent to Steve Jobs, for example, an Apple executive noted that the threat level to the App Store of Google's Android Market was "high" and that Google was "investing in the area where they have been weakest." DX-3889 at -016–17; *see also* DX-3866 at -250 (similar in 2012).

238. Apple has also benchmarked the App Store against Android Market and Google Play. A 2012 presentation does so explicitly, with extensive comparison analysis of the "Android Market vs. App Store." DX-4593 at -173–85. Likewise, a 2017 presentation listed Google Play in the "Competition" section. DX-4399 at -656. And in a 2013 presentation, Apple compared the App Store's shares of total billings in various games to the Android share of total billings. DX-3316 at -913.

239. Apple understood that other Android marketplace platforms were competitive forces as well. Schiller TT. Apple circulated internally a competitive analyses for other platforms as they launched. DX-4562. As but one example, when Amazon launched its Android app marketplace, Mr. Schiller wrote internally: "[T]he 'threat level' is not 'medium', it is 'very high.'" DX-4447 at -304. And at the Fourth Annual App Store Global Management Team Summitt, Apple spent considerable time discussing competition from Google, Samsung, and Amazon. DX-3734 at -164–76.

240. Apple also competes against PC and console game app platforms such as Microsoft's Xbox and Sony's PlayStation. Schiller TT. As early as 2009, Apple executives discussed Sony's PSP Go as "a key competitor" to the iPhone "because Sony also relaunched the PSN [PlayStation Network] Store." DX-4389 at -956. Apple also discussed internally how,

"[i]f we're going to get serious about facilitating competitive gaming, Game Center needs to offer the same capabilities that Xbox Live Arena will offer." DX-3320 at -090. And Apple executives discussed, tracked, and sought to improve the company's position within the broader gaming industry that included mobile, PC, and console platforms. DX-3381 at -677; DX-4178 at -988.

241. The appeal of mobile gaming attracted new competitors. For example, Nintendo introduced the Switch—a quasi-mobile device—in 2017, and the eShop became the Switch's online store. Schmalensee TT. At Apple, App Store executives recognized that this new "console / handheld hybrid" launched a new front in competition for playing games with a "transitory experience." DX-3850 at -513; Schiller TT; Hitt TT. Epic employees similarly recognized that "adding new platforms like mobile and Switch" affected sales on other platforms. DX-3867 at -077.

242. Similarly, other companies introduced new tablet devices, such as Amazon's Fire and Microsoft's Surface. Schiller TT.

243. In addition, many other developers launched major digital distribution platforms for their own and others' titles. Cook TT; Schiller TT. Among others, Ubisoft launched Ubisoft Connect in 2012; Bethesda launched Bethesda.net in 2016; and, as discussed below, Epic launched the Epic Games Store in 2018. Schmalenesee TT; *see also infra* § XI.A.

244. Recognizing that Apple faced competition from all sides, an internal analysis from 2017 estimated that the App Store's market share—in a worldwide "games business" including platforms for game transactions on mobile, console, and PC devices—was about 27% in the worldwide "games business." DX-4178 at -988.

245. This field has only become more crowded as, most recently, several online, cloud-based streaming game platforms have been introduced. Cook TT; Schmid TT; Schmalensee TT. [redacted]

245.1 Google Stadia publicly launched in November 2019 and is accessible through web browsers on iOS, through the Chrome browser on PCs, or through its Android mobile app on Android phones. It allows free access to the platform but requires users to purchase games on the Stadia platform, just like they would on the console. Stadia also offers a subscription model that increases streaming resolution and provides access to a library of free games every month. Schmid TT; Schmalensee TT.

245.2 Nvidia GeForce Now publicly launched in February 2020 and is accessible through the Safari web browser on iOS or through the GeForce Now client. It allows users to stream games previously acquired or purchased from digital game distribution platforms (such as Steam or EGS). It does not implement transactions between developers and users, which instead occur through the digital game distribution platforms where the games are hosted. Schmid TT; Schmalensee TT.

245.3 Sony PlayStation Now is a subscription-based streaming service that gives users access to a Netflix-like library of PS4, PS3, and PS2 games. Various versions of this service have been available since 2014. Users can stream or download games, but games are generally not available for purchase. Schmid TT; Schmalensee TT.

245.4 Microsoft Xbox Cloud Gaming with Xbox Game Pass Ultimate (formerly known as Project xCloud) is a subscription-based streaming service that allows users to stream games to their Android devices. It also allows users to stream the games they had purchased on their Xbox console as long as the games are installed on their local device. And it appears to allow users to buy games, subscriptions, and downloadable content through the Xbox Game Pass app in the Samsung Galaxy Store. Xbox Cloud Gaming became available for selected Android devices in September 2020 and is coming to iOS in 2021. Schmid TT; Schmalensee TT.

245.5 Amazon Luna lets users play games on compatible Fire TV, Windows PC, and Mac devices as well as through web apps on iPhones, iPads and select Android phones. It has been available by invitation only to 'early access' subscribers since October 2020 and offers a subscription model rather than individual game purchases. Currently Amazon Luna is in its beta form and early access is available exclusively by invitation, but it already uses the Safari browser on iOS. Schmid TT; Schmalensee TT.

246. [redacted]

247. Accordingly, Apple competes for developers and users across these platforms. Schiller TT. Consumers have a choice of devices and transaction platforms through which to acquire, modify, and play games. Schiller TT; Schmalensee TT. Thus, Apple competes to provide a platform that is user-friendly, reliable, safe, private, and secure. Schiller TT; Schmalensee TT. Similarly, developers also have a choice among the distribution channels, including various transaction platforms, through which to distribute their apps to consumers. Schiller TT; Schmalensee TT. And Apple likewise must make its platform attractive to developers. Schiller TT; Schmalensee TT.

XI. AFTER MANY YEARS PROFITING FROM ITS RELATIONSHIP WITH APPLE, EPIC FLAGRANTLY BREACHES ITS AGREEMENTS

A. Epic's Business Model.

248. Epic is a video game developer founded in 1991. Sweeney TT.

248.1 As noted above, Mr. Sweeney found it difficult in the early 1990s to sell games through retail channels. Sweeney TT. Epic therefore distributed games for itself and others using a shareware model. Sweeney TT. This means Epic gave away the first episode of multi-episodic games for free—allowing those users to copy and share the game—and offered to sell the additional episodes by mail order. Sweeney TT.

248.2 Around 1998, Epic moved to a different distribution model. Sweeney TT. It signed a publishing deal with TT Interactive and distributed primarily through retail, selling packaged PC games through traditional brick-and-mortar outlets. Sweeney TT.

248.3 During the mid-2000's, Epic's business model shifted again as the company became a multiplatform developer, developing console games in addition to PC games. DX-3710 at 731-32.

249. Developing video games remains Epic's primary business today. Epic sells these games to customers directly and through several game transaction platforms. Sweeney TT.

249.1 Currently, Epic's popular games include *Fortnite*, Unreal, Gears of War, Shadow Complex, and the Infinity Blade series. Sweeney TT.

249.2 Among these games, *Fortnite* is Epic's breakout product. DX-3976 at -935. In June 2020, *Fortnite* had 350 million registered global users. Sweeney TT. Up until August 2020, *Fortnite* was available on Microsoft Windows, Mac Store, PlayStation 4, Xbox One, Nintendo Switch, Google Play, the Samsung Galaxy Store, Epic Games Store, and the App Store. Sweeney TT; DX-3742. Indeed, one of the reasons for *Fortnite*'s popularity was Epic's enablement of cross-platform play allowing players to compete against others on different consoles as well as allowing to maintain the same account on multiple platforms. DX-3786 at -889.

249.3 *Fortnite* primarily relies upon a "freemium" model: The game is largely free to download and play, but certain additional in-game features and enhancements can be purchased. Sweeney TT. Epic primarily generates revenue through in-app purchases—selling so-called "V-Bucks," a digital currency that can be used to obtain items in *Fortnite*. DX-3807 at 7–9. V-Bucks can also be purchased directly from Epic's website. Sweeney TT.

249.4 Epic sells V-Bucks to consumers in various bundles and packages. DX-3445. When *Fortnite* was available to download on the App Store, a "Starter Pack" cost $4.99. *Id.* From there, Epic sells V-Bucks in various quantities at increasing prices: 1,000 V-Bucks for $9.99, $24.99 for 2,500 V-Bucks, and so on—all the way to 13,500 V-Bucks for $99.99. *Id.*; *see also* DX-3774 at -770 (outlining Epic's U.S. V Buck prices in July 2020); DX-3807 at 20. After Epic implemented its hotfix on iOS, it dropped V-Bucks prices by 20% for purchases made through Epic's direct payment option on iOS and Google Play as well as for purchases on every other platform through which Fortnite was offered (i.e., 1000 V-Bucks cost $7.99, 5,000 now cost $31.99, and 13,500 V-Bucks cost $79.99). DX-3774 at -770; DX-5317; *see also infra* § XI.K.

249.5 As Epic's Lead Product Manager observed, free-to-play games like *Fortnite* "are like little monopolies -- no one else is selling V-Bucks." DX-3486 at -420.

249.6 Epic also monetizes *Fortnite* in ten other ways. DX-3807 at 7–9.

249.7 First, in addition to V-Bucks, users can directly purchase *Fortnite* content, "typically in the form of bundles that contain combinations of V-Bucks, cosmetics and other in-game content such as challenges." DX-3807 at 7.

249.8 Second, users "can subscribe to *Fortnite* Crew, a subscription" service offered by Epic. DX-3807 at 8.

249.9 Third, one of *Fortnite*'s game modes, Save the World, is accessible only upon payment of a up-front fee (and also has in-app content available for purchase). DX-3807 at 8.

249.10 Fourth, Epic "generates revenue by selling *Fortnite* content outside of the game, typically in the form of redeemable codes sold through traditional retail and online stores." DX-3807 at 8.

249.11 Fifth, Epic at times has generated revenue through in-game advertising or cross-promotions. DX-3807 at 9.

249.12 Sixth, Epic "has received revenue for providing third parties with promotional codes redeemable for *Fortnite* content." DX-3807 at 9.

249.13 Seventh, "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, and Epic received a small portion of the revenue from each bundle sale." DX-3807 at 9.

249.14 Eighth, "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." DX-3807 at 9.

249.15 Ninth, "Epic 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*." DX-3807 at 9.

249.16 Tenth, "Epic 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. DX-3807 at 9.

249.17 [redacted]

249.18 Epic has largely agreed to pay a 30% commission rate on all app transactions.

118 [redacted]

218 [redacted]

318 [redacted]

418 Other platforms with which Epic distributes *Fortnite* also require Epic to use the platform's payment solution. Kreiner depo. at 76:5–8, 85:21–86:2, 94:23–95:10.

250. The second component of Epic's business—run through its subsidiary (and non-party) Epic S.A.R.L. ("Epic International")—is the development and licensing of the Unreal Engine to other developers. The Unreal Engine can be used to develop games and other products. Sweeney TT.

250.1 Epic International requires all developers that seek to use the Unreal Engine to enter into an End User License Agreement (EULA). DX-4022.

250.2 Epic International seeks to make a profit on Unreal Engine. Penwarden depo. at 34:19–20. To that end, Epic charges a monthly subscription fee for access to newer versions of Unreal Engine, including UE4. DX-3596. Epic International also charges a royalty on products that use any version of the Unreal Engine—typically 5%. DX-4022 at -255–56 (§ 5); DX-3366 (standard 5% royalty on games built with Unreal Engine). In the past, developers were required to pay Epic International royalties after a particular product exceeded $3,000 in revenue per quarter; in 2020, Epic changed its policy. DX-4937. Now, Epic International is owed royalties after a product earns $1,000,000 in its lifetime. *Id.*

250.3 Epic International thus profits in perpetuity from any success a developer experiences on a product using the Unreal Engine. As Epic's former CFO stated, this model ensures that if developers succeed, Epic "can participate in that success." Babcock depo at 180:5–9. Epic International collects these royalties in perpetuity. Penwarden depo. at 30:7–8.

250.4 [redacted] Epic International enjoys a 100 percent gross margin on its "engine business." DX-3359 at -978.

251. The third and most recent component of Epic's business is the maintenance of its own marketplace, used exclusively for game apps and Spotify called the Epic Games Store (EGS). Sweeney TT.

251.1 Epic introduced EGS in December 2018. DX-4158.

251.2 Like other platforms, EGS uses a commission model. DX-4158. Epic usually charges 12%. *Id.*

251.3 Epic acknowledges that this commission is not merely a "payment processing" fee. The 12 percent fee is intended to cover all of Epic's variable operating costs associated with selling incremental games to customers. Sweeney TT. 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." Kreiner depo. at 242:9–43:13. The commission is thus "tied into these broader ecosystem benefits that [Epic] provide[s] to [its] developers," *id.* at 243:19–22, and intended to cover the full "cost of operating the service," "the actual distribution cost, the internet bandwidth cost, the . . . cost of maintaining it." Rein depo. at 110:4–25; Allison depo. at 228:23–229:16.

251.4 From EGS's launch to December 2019, Epic collected its commission through its own payment mechanism, which it required developers to use for all game purchases and in-game purchases. Allison depo. at 252:8-19; DX-3819.

251.5 [redacted]

B. Epic has been an Apple developer for over a decade.

252. In 2010, Apple courted Epic to collaborate and enhance iOS's reputation as a game platform. Schiller TT. Epic soon after agreed and signed a Developer Agreement. Schiller TT. Epic S.A.R.L. subsequently signed a Developer Agreement and DPLA (for the account associated with Unreal Engine). Schiller TT. According to Mr. Sweeney, Epic 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. Sweeney TT. There has been no material change in the terms of Epic's agreement with Apple, nor in Apple's business design, since 2010. Schiller TT.

253. Epic released three iOS games before *Fortnite*, and Apple featured each of them at major events. Malik depo. at 117:7–24. These events allowed Epic to make use of Apple's brand.

253.1 This began with Epic's first iOS game, Infinity Blade, in 2010. DX-4455 (email thread about meeting between Epic and Apple to discuss Infinity Blade under codename "Sword"); DX-3710 at -732. Epic released Infinity Blade for iOS because it thought that there was a bright future ahead for 3D high quality games on mobile platforms, and there were a large number of iOS users. Sweeney TT. Apple spotlighted this game at a special event later that year. DX-3788.

253.2 Similarly, Infinity Blade II was released in 2011 and featured at the keynote presentation for the iPhone 4S. DX-4494. And Infinity Blade III was released in 2013 and featured at the 2013 keynote presentation for the iPhone 5S. DX-3147.

254. Epic debuted *Fortnite* on a number of platforms—including Windows, Mac, Xbox One and PlayStation 4—in July 2017. Sweeney TT; Hitt TT. Initially, consumers had to pay to download and play *Fortnite*. Sweeney TT; Hitt TT. In September 2017, Epic released "Battle Royale"—a free-to-play game mode with features available for in-app purchase. Sweeney TT. With Battle Royale's success, *Fortnite* quickly "became more about Battle Royale" and, thus, a primarily "free-to-play game." Kreiner depo. at 169:10-11.

255. In early 2018, Epic and Apple arranged for the release of *Fortnite* on iOS. Schmid TT.

255.1 From the early days, Epic supported cross-platform scenarios to allow users of different devices to play *Fortnite* with one another. Sweeney TT. Cross-platform scenarios occur where games on one platform access "content, subscriptions, or features" that were acquired on other platforms or on a developer's website. DX-3695 at -093–96 (§§ 3.1.1, 3.1.3).

255.2 These cross-platform play scenarios were critical to *Fortnite*'s appeal. DX-3786 at -889 ("*Fortnite* is multi platform to the core"). But cross-play was not permitted on all platforms, including Microsoft's and Sony's. Sweeney TT. Epic therefore had significant discussions with Microsoft and Sony to enable broader cross-platform play. *Id.* [redacted]

255.3 Epic did not encounter such difficulty with Apple. Before launching *Fortnite* on iOS, Epic sought to leverage Apple's significant interest in "the mobile version of [*Fortnite* Battle Royale]" to obtain Apple support in operationalizing cross-play capabilities and secure marketing support from Apple. DX-3448 at -165. Apple obliged: Before Epic debuted *Fortnite* on iPhone in March 2018, Apple had operationalized cross-platform play. Schmid TT. That included previously changing its Guidelines to expressly permit the cross-platform functionalities similar to what Epic had requested. DX-3695 at -093–96 (§§ 3.1.1, 3.1.3). Apple continued to permit such cross-functionality on *Fortnite* while the game remained on the App Store. Schmid TT.

255.4 In addition to cross-platform play, Apple also facilitated cross-progression (game progress synced across platforms), Sweeney TT, and cross-wallet functionality (allowing purchases from one platform to be used on others). Sweeney TT.

255.5 Epic has recognized that Apple's permissive cross-platform policies contributed to *Fortnite*'s success as a cross-platform game. Sweeney TT.

C. Epic has benefitted from Apple's support over the years.

256. Epic reaped enormous benefits from its relationship with Apple. First, Epic used Apple's robust technical tools and software to develop and improve its game apps.

256.1 Apple has provided hardware to Epic as well as 16 Apple SDKs (each of which includes thousands, if not tens of thousands, of APIs, among many other features). Federighi TT. Apple also permitted Epic to distribute builds on hundreds of iPads and iPhones for testing purposes. Federighi TT. Epic's use of these tools began long before it released *Fortnite* for iOS. *See supra* § XI.B (Epic released games for iOS as early as 2010).

256.2 For *Fortnite* alone, Epic has used thousands of Apple's unique API frameworks and classes, as well as five different versions of Apple's SDK, six unique Xcode builds, and other software and tools. Grant TT; DX- 3807 at 14–17; Malackowski TT.

256.3 For example, Epic has used AdSupport, Audio Toolbox, AVFoundation, CloudKit, CoreAudio, CoreGraphics, CoreMedia, CoreMotion, CoreVideo, DeviceCheck, Foundation, GameController, GameKit, HealthKit, HomeKit, iAD, IAP, MediaToolbox, Metal, MultipeerConnectivity, QuartzCore, SafariServices, Security, SotreKit, SystemConfiguration, UIKit, UserNotifications, VideoToolbox, and WebKit. Malackowski TT.

256.4 As Epic acknowledged, not only is it "virtually impossible to develop an app for, or a toolset for development on, iOS [] without" these tools, DX-3807 at 14, but Apple's software and tools also are superior to those available on other mobile devices. Penwarden depo. at 69:8–70:9.

256.5 In one email, Epic's Lead Producer of Special Projects, John Jack, wrote to Epic's Vice President of Engineering, Nick Penwarden, "We've been making use of Metal on iOS to great effect since its release in 2014." DX-3098 at -599. He went on, "[a] fast, agile, feature-rich API like Metal is exactly what we need to bring a game designed for modern consoles and desktops to the battery-powered iPhone and iPad." *Id.* Apple's tools "bl[ew] away" competitors "in every way" and were instrumental to getting "*Fortnite* ship-ready on iOS in a handful of months." *Id.*

256.6 Indeed, Epic praised Metal and other Apple tools repeatedly. Malackowski TT; Schmid TT; DX-3462 at 77:7–11, 79:3–10.

256.7 Apple protects this technology with its intellectual property rights, comprising patents, copyrights, and trademarks, Malackowski TT, which Apple agreed to license to Epic subject to the terms of the DPLA, Penwarden depo. at 100:1–2.

257. Second, Apple has provided Epic with an extraordinary degree of support as it expanded its business on iOS.

257.1 Apple's Developer Relations was in near-constant contact with Epic to work on technical issues and accommodate *Fortnite*'s biweekly update schedule. Schmid TT. Apple even brought an employee stationed in Australia onto the Epic team so that Apple could provide Epic with 24-hour coverage. Schmid TT.

257.2 [redacted] Indeed, Apple held weekly conference calls with Epic regarding "Fortnite-related topics." Penwarden depo at 93:25–95:14.

257.3 [redacted] Apple also provided Epic a memory entitlement that allowed *Fortnite* to run on devices featuring 2 GB of RAM—a feature not possible on Android at the time. DX-4025 at -516. Apple would even reach out proactively to discuss ways in which it could help support Epic on various devices. DX-4011.

257.4 On other occasions, Apple assisted Epic with Unreal Engine by coaching its team on how to implement augmented reality and virtual reality features as well as optimizing performance of Unreal Engine on Apple hardware and operating systems. Schmid TT.

257.5 Apple also provided Epic with early disclosure briefings so that Epic knew in advance about upcoming technological changes in Apple's software. Schmid TT. Apple sent engineers to Epic's headquarters on a semi-annual basis for consulting and coordination. Schmid TT.

257.6 As Epic acknowledged in an email to Apple: Apple's support was "by far the best they are getting from any platform." DX-3559.

258. Third, Epic benefitted significantly from Apple's robust app review process.

258.1 Apple's app review team reviewed *Fortnite* more than 200 times, and Apple pushed over 140 unique updates of the game. Schmid TT.

258.2 While Apple does not assign specialists to a single app or company, Apple internally escalated Epic's requests to prioritize them. DX-3081 at -406–09; DX-3574 at -436–37; Schmid TT. These demands were frequent. From May 2018 to May 2019, Epic made "34 (!)" expedited requests. DX-3427 at -040. In October 2019 email, Apple observed that Epic had submitted "'emergency' patches with 'critical' fixes every week for some time." DX-3758 at -566. As Apple observed,

"[i]t almost feels like they're abusing expedite requests due to a systematic issue on their end in the development/QA/submission process." DX-3427 at -040.

258.3 Nonetheless, Apple honored almost all of Epic's 80+ requests for expedited app review in 2020—even though developers are typically required to make such expedited requests only in extenuating circumstances. Schmid TT. Those expedited app reviews would typically be completed within a few hours. Schmid TT.

258.4 Apple also gave Epic "compliance extension[s]," allowing them leeway to fix their apps. DX-4082 at -539; Schmid TT.

259. Fourth, Apple provided Epic with an unprecedented degree of marketing support. This marketing support helped Epic benefit from Apple's trademarks and brands. Malackowski TT.

259.1 Apple regularly featured *Fortnite* in areas of the App Store that drove user traffic to the game, including "on the games tab and in games we are playing lists." DX-3497 at -748.

259.2 As noted above, Apple also specially promoted the launch of each iOS app developed by Epic. *See supra* § XI.B. These were significant events. Schmid TT. For example, Epic's lead gameplay programmer appeared during WWDC 15 to showcase Epic's launch of *Fortnite* through an on-stage demo at WWDC 15—reaching the full WWDC 15 audience (and subsequent viewers through YouTube). DX-4489 at 10–12; Malackowski TT.

259.3 Apple also repeatedly offered to feature Epic's *Fortnite* app in the App Store and promote new seasons of *Fortnite* through "several different marketing channels." DX-4489 at 11. "These included App Store banners and app featuring as well as posts and paid advertisements on social media." *Id.*

259.4 Indeed, Apple even "permitted *Fortnite* to 'take over' the App Store at times, featuring the app prominently on the App Store's most sought-after and frequented spaces." Schmid TT. In December 2018, Apple ran a global promotion that featured *Fortnite* on the App Store's "Today" tab—the default homepage tab when one opens the App Store. DX-4243; DX-3895 at -398; Schmid TT. Apple did the same in 2019 for the launch of *Fortnite*'s Chapter 2, featuring *Fortnite* on the "Today" tab for 24 hours straight. Schmid TT. At the same time, *Fortnite* also was simultaneously provided with a "full-screen takeover" of the App Store's "Games" tab. Schmid TT. No other game has ever been featured as prominently on the App Store at any time either before or since. Schmid TT.

259.5 Another example in which Apple "moved mountains" for Epic was its 2018 enablement of gifting. DX-4262 at 700. In response to a request from Epic to enable gifting for a *Fortnite* promotion, Apple not only changed its guidelines but developed new safety requirements to permit such gifting in *Fortnite* going forward. Schmid TT; DX-4262 at -699.

259.6 Mr. Sweeney acknowledged in an email that "Apple went far out of their way to approve" the gifting promotion. DX-4262 at -699. Likewise, Mark Rein stated that Apple had "work[ed] their asses off to allow" gifting. *Id.* at -702. Apple had also, in coordination with the gifting promotion, again arranged to put *Fortnite* "at the top of app store discovery page in every market on Christmas morning . . . where *Fortnite* is offered around the world." *Id.*

259.7 As but a few more examples, Apple agreed to co-market *Fortnite*'s Season 9 launch, DX-4456 at -689, which included "a considerable amount [of] social [media] effort" by Apple. DX-4148 at -374. During WWDC 18, Apple asked Epic to participate in a presentation regarding Metal, and Epic gave a presentation using *Fortnite* on iOS as an example. DX-4489 at 10–12. Apple provided marketing support for *Fortnite*'s 2019 virtual Marshmello concert, Rein depo. at 65:8–68:1, including paying for a billboard in Times Square. Schmid TT.

259.8 Apple sent 500 million marketing communications about *Fortnite* between September 2019 and August 2020. Schmid TT. And in just the 11 months prior to *Fortnite*'s removal from the App Store, Apple spent close to $1,000,000 on paid marketing for *Fortnite*. Schmid TT.

259.9 As Apple and Epic observed on multiple occasions, "our teams have been working together," DX-4475 at -280, and Apple's support was "by far the best [Epic was] getting from any platform," DX-3539. And Epic executives repeatedly recognized and thanked Apple for its support and promotion of *Fortnite*. Schmid TT; *see also*, *e.g.*, DX-4239 at 587 (thanking Apple for its support to *Fortnite*'s Season X launch, noting "[t]hese wins truly matter to our teams here").

259.10 Apple's marketing support improved Epic's bottom line. From March 15, 2018 through August 14, 2020, Apple paid for advertising on various media channels that drove almost a half-million *Fortnite* transactions at a channel level—*i.e.*, transactions that occurred within 24 hours of an ad-click directing users to the App Store, where they then downloaded the *Fortnite* game for the first time. Schmid TT.

260. The value of Apple's support was not lost on Epic. Internally, Epic bemoaned the fact that it lacked a support team like Apple's. DX-3397 at -543 (Mr. Sweeney stating, "I wish we had an awesome dedicated [customer support] driver – this degree of introspection and push to improve should be someone's full-time job."). [redacted]

D. Epic has achieved success with *Fortnite* by using free distribution (and in-game purchasing functionality) to earn more than $700 million across over 100 million iOS accounts

261. Since its 2018 iOS debut, *Fortnite* has been distributed using a "freemium" model, in which a user can download the application for free but has the opportunity to purchase certain in-

app content. Schmid TT. This kind of business model is facilitated by the App Store, including IAP. Schiller TT; Schmalensee TT.

262. From the start, iOS drove new players to *Fortnite*, DX-3233 at -265, and Epic realized "strong monetization of [*Fortnite*] on iOS devices." DX-4531 at 435. For example, *Fortnite*'s introduction to the App Store coincided with the average in-app purchase on Epic apps through the App Store roughly doubling. Hitt TT.

263. That said, the vast majority of Epic's Fortnite revenue (93%) is generated on non-iOS platforms. Hitt TT. Among users who made a purchase between March 2018 and July 2020, only 13% made a purchase on an iOS device—meaning that Epic was able to transact with 87% of paying Fortnite users without paying any commissions to Apple. Hitt TT.

264. Still, with Apple's support, in only two short years, *Fortnite* on iOS earned Epic more than $700 million across over 100 million iOS user accounts. Hitt TT.

E. Epic Games Store is unprofitable and not comparable to the App Store.

265. As noted above, EGS is not profitable and will not be profitable for at least multiple years, if ever. Allison depo. at 89:22–90:3; 119:13–16; Kreiner depo. at 244:2–5; 256:12–16.

265.1 Epic lost around $181 million on EGS in 2019. DX-4361 at -016. Epic projected to lose around $273 million on EGS in 2020. *Id.* Indeed, Epic committed $444 million in minimum guarantees for 2020 alone, Allison depo. at 100:19-22, while projecting, even with "significant[]" growth, only $401 million in revenue for that year, DX-3467 at -131. Epic acknowledges that trend will continue in the immediate future: Epic projects to lose around $139 million in 2021. DX-4361 at -016.

265.2 As Epic has acknowledged, the incentives and investments it has made in an attempt to grow EGS will result in "unrecouped costs." Allison depo. at 88:18–90:3. That includes at least $330 million in unrecouped costs from minimum guarantees alone. DX-3993 at -233. At best, Epic does not expect EGS to have a cumulative gross profit before 2027. DX-4361 at 016.

265.3 As a result, Epic has funded, and must continue to fund, EGS through funding and capital raised by other parts of its business, which have been "incredibly profitable" for "several years." Allison depo. at 121:17–122:16.

266. In addition, EGS provided services and user experiences that were inferior to leading platforms like the App Store.

266.1 It took until 2020 for Epic to make several key "launcher performance improvements," which it acknowledged were a "[b]ig help for Mac." DX-3678 at 4.

266.2 By its own admission, the Epic Games Store—two years after it launched—is still missing "critical" features. Allison depo. at 136:17-137:6. It does not offer

personalized features like Achievements and Player Profiles, for example. DX-3678 at 5. It also has no shopping cart, which prevents users from purchasing multiple items in the same transaction. Sweeney TT.

266.3 Epic also lacks a dedicated EGS support team comparable to Apple's. DX-3862 at -532–34. As Mr. Sweeney complained in one email: "What happened with the community team who was supposed to engage on Epic Games store topics online by offering customer service escalation on reported problems? I've seen nothing. Literally zero, while we're being endlessly bombarded with claims of problems that Epic isn't answering." DX-4437 at -758.

266.4 Epic also lacks other security features. Because of the integration between its hardware, software, and services, Apple is able to provide parental controls that give parents choices on how and whether to allow children to make purchases. Shoemaker depo. at 150:22-151:6. [redacted]

267. There have been significant security breaches involving EGS as well.

267.1 [redacted]

267.2 [redacted]

F. Epic lays the groundwork for Project Liberty in order to revive and reinvigorate its business.

268. Between 2018 and 2019, *Fortnite*'s average monthly active users and revenues declined.

268.1 [redacted]

268.2 [redacted]

268.3 These trends were consistent with Epic's observations that gamers were growing dissatisfied with *Fortnite*. The company understood that *Fortnite* was late in the video-game life cycle. DX-3774 at -763 (Epic recognizing a "slow down in engagement" in *Fortnite* in 2020). And it took note internally when "#RIPFortnite" was trending on Twitter. DX-3430 at -830.

268.4 Epic knew these trends were not a blip; the company expected the declining interest and revenue to continue. Babcock depo. at 103:11–13.

269. As a later board presentation revealed, Epic coalesced around a goal: To revive and reinvigorate *Fortnite* by turning it out to developers to create new content. DX-3774 at -764–65. This would make *Fortnite* a platform and Epic the middleman. But in order for this new business model to succeed, Epic needed to find a way to cut the commissions charged by platform providers so Epic could "shar[e] [a] majority of profit with creators." *Id.* at -765. According to Epic, "Platform Fees" posed "an Existential Issue" to the company's plans for *Fortnite*. *Id.*

270. The result was "Project Liberty," Epic's effort to challenge the software distribution and supposed payment monopolies of Apple and Google. Sweeney TT; DX-3774 at -763.

271. Project Liberty was driven from the top: Mr. Sweeney was "in the loop on this topic 100%," DX-4419 at -233, and approved the strategic decisions for Project Liberty. Sweeney TT.

271.1 Chief among these was Epic's decision to only target the two main mobile platforms: Google and Apple. As noted above, Epic earned only a small fraction of its total *Fortnite* revenue through these companies' platforms and projected for 2020 that they would comprise just 6.5% of *Fortnite*'s net revenue. DX-4018 at -006.

271.2 It also meant that Epic chose not to target all platforms charging 30%. Shobin depo. 79:5–80:3, 89:20–90:24, 95:19–96:15. That included Samsung—which charges a 30% commission and does not "abide by the principles for app fairness" established by Epic's App Fairness Coalition—but with which Epic had arranged for a favorable side deal. Weissinger TT; Nikdel depo. at 44:3–9.

271.3 Epic's decision thus was incongruous with much of its stated rationale. *See* DX-3782 at -331 (Epic employee explaining that "Tim S[weeney] stated that Samsung is our most important partner, above all others," in response to another employee pointing out that Epic's "collective win" would lie in "aim[ing] at Samsung like we begrudgingly do with Apple"). "For god's sake, why do we hate Apple," one Epic employee asked internally. *Id.* at -324.

272. [redacted] And "[a]t Tim [Sweeney]'s request" Epic formed "a special project team" in April 2020. DX-3523 at -040. Epic assembled about 100-200 employees to staff Project Liberty. Shobin depo. at 94:18–25.

273. Epic's first strategic choice was to submit *Fortnite* to the Google Play Store.

273.1 [redacted]

273.2 Epic reversed course in 2020 to pave the way for its plan to attack Apple and Google at once. Sweeney TT. Internal emails from September 2019 reveal Epic's "goal" was "to draw Google into a legal battle over anti-trust. Once we are ready to submit, Epic will announce publicly that we are going to Google Play. If we are rejected for only offering Epic's payment solution. The battle begins. It's going to be fun!" DX-3069 at -883.

274. Epic spent the Spring of 2020 in the planning stages of Project Liberty. Sweeney TT.

274.1 [redacted]

274.2 Epic "investigated" various ways it could surreptitiously implement an alternative payment system, "like, obfuscating the code" or "encrypt[ing]" the relevant features. Nikdel depo. at 168:1-21.

274.3 By May 11, 2020, the main contours of Epic's 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." DX-4419 at -234.

274.4 In addition, Epic developed "Epic Mega Drop," its plan to lower the price of *Fortnite* items by an average of 20 percent on certain platforms. Sweeney TT. "Mega Drop" would reduce pricing on platforms other than Apple's and Google's. DX-4561 at -376.

274.5 Epic began holding weekly meetings to plan Project Liberty's details, frequently including Epic's outside counsel, Cravath, Swaine & Moore LLP. DX-3476; DX-3924; DX-4138; DX-4247. Indeed, certain attorneys from Cravath, such as Mr. Gary Bornstein, had their own Epic email addresses. DX-5307 at -514.

274.6 By the end of June 2020, Epic had established its rough timeline:

- On June 30, Epic would "[a]sk Apple and Google leadership to allow competing stores and competing payment methods."
- On July 20, Epic would reach out to its console partners to discuss upcoming price changes.

- On August 4, Epic's client—including the "tech for [hot-fixing]-on competing payment methods"—would "go[] live."
- On August 13, Epic would activate the hotfix and implement the price reductions.

DX-4561 at -375. The hotfix was timed to go live two weeks before the launch of *Fortnite*'s Season 14. *Id.*

275. In accordance with its timeline, Epic tested the hotfix on multiple occasions. DX-3586; DX-4031. This testing was extensive. Grant TT. In between these tests, Epic used analytics to determine the number of players that would receive the hotfix once triggered. Shobin depo. at 239:9–241:13; DX-3083.

G. Epic renews its agreement with Apple, then seeks a side deal.

276. Epic and Epic S.A.R.L. renewed their two DPLAs with Apple on June 30, 2020. Schiller TT.

277. The same day Epic and Epic S.A.R.L. renewed their agreements, Epic sought a "side letter" or other special deal from Apple that would provide Epic with unique, preferable terms. Schiller TT. Specifically, Epic asked Apple to allow "[c]ompeting payment processing options" on iOS apps and to release a "competing Epic Games Store app available through the iOS App Store." DX-4477 (Dkt. 74-4). Epic demanded a response within two weeks. *Id.*

278. Apple replied on July 10, 2020. DX-4140 (Dkt. 74-5).

278.1 In that letter, Apple reminded Epic that "[t]he App Store is not simply a marketplace—it is part of a larger bundle of tools, technologies and services that Apple makes available to developers to develop and create great applications for" Apple products, and that Epic "has been a major beneficiary of this investment and support." DX-4140 at 1.

278.2 Apple continued: "Because of the App Store, Epic has been able to get *Fortnite* and other apps into the hands of millions instantly and at no cost, as Apple charges nothing upfront to distribute apps that are free to download. This exposure has earned Epic hundreds of millions of dollars from sales of in-app content, and brought with it lucrative brand partnerships and paid product placement." DX-4140 at 1–2.

278.3 Apple pointed out that it has maintained the same rules on the App Store since 2008, and has never allowed anything like what Epic demanded, because "[t]he guiding principle of the App Store is to provide a safe, secure and reliable experience for users and a great opportunity for all developers to be successful but, to be clear, when it comes to striking the balance, Apple errs on the side of the consumer." DX-4140 at 4.

278.4 In response to Epic's demand that Apple allow the Epic Store onto iOS, Apple explained that it "cannot be confident that Epic or any developer would uphold the

same rigorous standards of privacy, security, and content as Apple. Indeed, since Apple treats all developers according to the same terms, Epic is essentially asking Apple to outsource the safety and security of Apple's users to hundreds of thousands of iOS developers." DX-4140 at 5. "Even if such a model were feasible (and it is not), we are simply unwilling to risk our users' trust in such a way. Incorporating third party app stores into iOS would undermine Apple's carefully constructed privacy and security safeguards, and seriously degrade the consumer experience and put Apple's reputation and business at risk." *Id.* at 4.

278.5 Apple then "respectfully decline[d]" to accede to Epic's request to turn the App Store into "a public utility." DX-4140 at 5–6.

279. Epic responded on July 17, 2020, calling Apple's letter a "self-righteous and self-serving screed" and warning that "Epic is in a state of substantial disagreement with Apple's policy and practices, and we will continue to pursue this, as we have done in the past to address other injustices in our industry." DX-4480 (Dkt. 74-6). In neither Mr. Sweeney's June 30 email nor his July 17 email did Epic reveal its plans to enable an alternate payment system through a hotfix.

H. Epic carefully prepares to launch a media campaign against Apple.

280. Epic recognized that it was "not sympathetic." DX-4561 at -407. It also recognized that if Apple and Google blocked consumers from accessing the app, "[s]entiment will trend negative towards Epic." DX-4018 at -1048. "[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." DX-4419 at -234.

281. Epic also studied Apple's (and Google's) responses to major public "[i]ncident[s]." DX-3209 at -263. In particular, Epic noted that "Apple publicly refused to comply" with the FBI's request to create a "backdoor" into iOS in connection with its investigation of the 2016 mass shooting in San Bernardino, California. *Id.* Epic concluded that "[n]othing moves Apple to change other than notable consumer pressure." *Id.*

282. [redacted] Epic retained a public relations firm, DX-4561 at -408—to which it ultimately paid $300,000 in connection with Project Liberty, Weissinger TT—and devised a two-phase communications plan, DX-4561 at -407–08.

283. "Communications Phase 1" outlined Epic's plan leading up to the activation of the Hotfix. DX-4561 at -407. This phase had three goals. *Id.*

283.1 First, Epic sought to "Define our Cause." DX-4561 at -407. Epic sought to devise "Policy Points" and start "Establish[ing] them Publicly." *Id.* To do so, its internal communications team and outside consults would "create a list of advocacy points" and "then seed with press and run ads." *Id.*

283.2 Second, Epic decided to "Establish a 501c4 Organization" to "[a]dvocate" on its behalf. DX-4561 at -407. By design, this organization was under the control of Epic and its leadership team. DX-4166 at -535. The purpose of establishing a separate organization was to create a "sympathetic" public face. DX-4561 at -407. "Epic is not sympathetic." *Id.* Smaller developers, Epic concluded, "are sympathetic." *Id.*

283.3 Third, Epic would "Create the Sustain Campaign," a "messaging" initiative "to ensure we're not the only voice" because, "[w]hen it comes to the press, that results in more neutral to positive coverage." DX-4561 at -407.

284. "Communications Phase 2" outlined Epic's plan once the hotfix went live. DX-4561 at -408. It too had three goals. *Id.*

284.1 First, Epic would continue its efforts to "seed" the press and "run ads" to "help establish our position." DX-4561 at -408.

284.2 Second, Epic would leverage "[t]raditional public relations where we use the press to apply pressure and drive support." DX-4561 at -408. Epic decided to "follow a two-week cadence where we create news through an inflection point every two years, and then generate continued press on that point through a 14-day trail." *Id.* This "strategy focuse[d] on, exhausts and moves on with three distinct audiences (press, consumers & policy makers) to influence the groups most likely to have an impact on Apple/Google." *Id.*

284.3 Third, Epic would use "Paid Media Efforts." DX-4561 at -408. This entailed enlisting "a game-changing supporter list" to "influenc[e] the general public." *Id.* Epic also intended to "target our digital advertising to both function as a push/pressure campaign" and create a petition drive to suggest the public supported its efforts. *Id.*

285. Throughout the summer of 2020, Epic carried out its plan. Epic created the Coalition for App Fairness, DX-3774 at -764, and "charged [it] with generat[ing] continuous media and campaign tactic pressure on Apple/Google," DX-3209 at -251; Weissinger TT.

286. Meanwhile, Epic gamed out various communications strategies depending on Apple and Google's responses to the hotfix. DX-4018 at -998. If *Fortnite* was "[r]emoved from [the] App Store," Epic decided that its "PR [team would] issue[] [a] statement saying [Apple and Google] removed the app because Epic wanted to offer cheaper payment platforms to players." DX-4561 at -416. This was consistent with the input Epic had sought and received from an outside consultant: Shift the narrative to "Apple/Google versus the player" and "Apple/Google versus the developer." DX-3933.

287. Epic also prepared several videos, communications, and other media with which it could blitz Apple. Epic prepared a short video called 1984 Fortnite in the style of Fortnite which presented an in-brand explanation of what Epic had done. Sweeney TT.

I. Epic briefs its board of directors and puts into place the final pieces of Project Liberty.

288. On July 27, 2020, Epic briefed its Board of Directors on Project Liberty, "Epic's War Against Mobile Platform Fees." DX-3774 at -763. The presentation detailed Epic's "Battle Plan." *Id.* at -767.

289. Epic outlined for its board the timeline it had devised. Epic had spent July forming the Coalition for App Fairness, testing the payment system it intended to smuggle in with the hotfix, and conducting "[p]ublic outreach." DX-3774 at -769. August 13, 2020, remained the "Go Live"—the date on which Epic would activate the hotfix—as it was "a Point of Maximum Leverage" given the upcoming launch of a new *Fortnite* season two weeks later on August 27, 2020. *Id.*

290. Epic described its plan to "embark on an aggressive and sustained legal and media campaign until platform fees are lowered, apps are allowed to use their own payment platform or 3rd party app stores are allowed on mobile." DX-3774 at -764. Epic would "lead a coalition of other leading tech companies in a PR and policy campaign against the 30% tax." *Id.*; Sweeney TT. And even after the go-live, Epic planned to hold weekly press beats as well as ongoing press interviews and "coalition communications." DX-3774 at -769.

291. Epic also briefed its board on "Elasticity" studies it had conducted. DX-3774 at -771. Epic acknowledged that these tests indicated that price reductions would increase "[p]urchase frequency . . . but not enough to offset price reductions." *Id.* Indeed, these studies indicated that average revenue per daily active user (ARPDAU) would drop 10.8% from spending under normal circumstances. *Id.* Epic therefore assured its board that the company's "business performance" so far that year "mitigated" the "[d]ownside," *id.* at -777, which was outweighed by the "[e]xistential" threat "Mobile Platform Fees" posed to "Fortnite as a competitive platform," *id.* at -765.

292. In the days following the Board Meeting, Epic CEO Tim Sweeney began issuing tweetstorms against Apple and the App Store, calling Apple's business model "especially gross" and suggesting that "Apple's operating system kernel and user-mode permissions layer" are all that's needed to keep Apple devices secure. DX-3109; DX-3501.

293. [redacted] Epic drafted detailed calendars to synchronize its communications strategy with the broader implementation of the Hotfix. DX-3586; DX-4378; DX-4031; DX-4201.

J. Epic knew its calculated breach would result in the removal of *Fortnite* from the App Store.

294. Internally, Epic understood that Project Liberty "jeopardize[d] Fortnite's availability on the App Store. Shobin depo. at 59:24-60:5. Mark Rein, Epic's 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." DX-4419. "They may also sue us to make an example," he added. *Id.*

295. Epic therefore planned to inform its console partners (Sony, Microsoft, and Nintendo) in advance about an upcoming pricing change while keeping Apple and Google in the dark. DX-4652; DX-3586 at -450.

296. That is what Epic did. In a June 2020 Quarterly Business Review, for example, Epic "update[d] Apple to the latest stuff in Fortnite." Shobin depo at 235:5-8. [redacted]

297. Meanwhile, Epic wrote to other platforms. DX-4579. In an email to Microsoft on August 5, 2020, for example, Mr. Sweeney explained his "confidential" plan to drop *Fortnite* prices that month. *Id.* He then added, "Epic has certain plans for August" that would "highlight the value proposition of consoles and PCs, in contrast to mobile platforms"—a "positive and supportive" development, he promised, for Microsoft, Xbox and Windows." *Id.* Two days later he wrote, "[y]ou'll enjoy the upcoming fireworks show." DX-3478.

K. In August 2020, Epic committed an intentional act of sabotage against the App Store.

298. In August 2020, Epic openly and willingly decided to violate its commitments to Apple. Schmid TT.

299. On August 3, 2020, Epic submitted version 13.40 of *Fortnite* to Apple for review. Unbeknownst to Apple, version 13.40 included code that enabled Epic to later activate the hotfix. Kosmynka TT. During the review process, Epic concealed from Apple its plans to launch an unapproved alternative payment system via hotfix. Kosmynka TT; Schmid TT.

300. Around 2:00 a.m. on August 13, 2020, Mr. Sweeney wrote to Apple stating the company's intent to breach its agreements: "Epic will no longer adhere to Apple's payment processing restrictions." DX-3078; Schiller TT; Sweeney TT. Shortly thereafter, still in the early morning, Epic activated its hotfix to inject a hidden payment mechanism in *Fortnite* that blatantly evaded App Review. Grant TT; Schiller TT.

L. As Epic anticipated, Apple removes *Fortnite* from the App Store.

301. On August 13, 2020, Apple removed *Fortnite* from the App Store. Schiller TT.

302. At 2:22 p.m. that day, Apple informed Epic in writing that *Fortnite* had been removed from the App Store for violations of the App Store Review Guidelines. DX-3460 at -359. Apple explained that version 13.40 of *Fortnite* violated Guidelines 3.1.1, 2.3.1, 2.3.12, and 2.5.2. *Id.* at -359–62. Apple also explained the steps Epic would need to take to cure its breach: Epic had to remove the "Epic Direct Payment" feature, remove any hidden features from *Fortnite*, provide a clear description of the actual changes Epic had made to *Fortnite*, and resubmit *Fortnite* for app review. *Id.* In other words, Apple provided Epic with a clear opportunity to come back into compliance, and restore *Fortnite* to the App Store, and Epic rejected it. Schiller TT.

M. Epic sues and declares war on Apple.

303. On August 13, 2020, Mr. Sweeney emailed Tim Cook, Phil Schiller, Matt Fischer and others threatening that Epic would be "in conflict with Apple on a multitude of fronts—creative, technical, business, and legal." DX-3906 at 2. Later that day, Epic sued Apple. Dkt. 1.

304. Epic meanwhile unleashed its pre-meditated media blitz. Epic announced a "#FreeFortniteCup" to take place on August 23, inviting players for one last "Battle Royale" across "all platforms," with prizes targeting Apple. DX-3724. In the same press release, Epic encouraged iOS *Fortnite* users to continue playing on other platforms: "If you're left behind on iOS after the Chapter 2 - Season 4 launch, the party continues on PlayStation 4, Xbox One, Nintendo Switch, PC, Mac, GeForce Now, and through both the Epic Games App at epicgames.com (https://www.epicgames.com/fortnite/mobile/android/getstarted) and the Samsung Galaxy Store (https://apps.samsung.com/appquery/appDetail.as?appId=com.epicgames.portal)." *Id.*

305. Epic released its parody video of the iconic Apple 1984 commercial, mocking Apple and its App Store business model. DX-4380.

306. Mr. Sweeney continued his tweetstorms. He publicized #FreeFortnite on his Twitter account. DX-3728. He also criticized Apple's small business program as providing consumers with "no relief" and stated that "[f]or Epic to use Apple payments exclusively would be to collude with Apple in restraining competition and inflating in-app purchase prices." DX-5316 at -489.

307. Epic even released a limited time skin in *Fortnite* called the Tart Tycoon "that's widely seen as a riff on Apple CEO Tim Cook." DX-3996.

308. Epic similarly launched a legal and marketing campaign against Google. DX-3745 at -842–84.

N. Apple terminated Epic's Developer Program account, as well as its Developer Agreement and DPLA with Apple.

309. On August 14, 2020, Apple sent Epic another letter outlining in greater detail how the hotfix breached Epic's agreements with Apple. DX-3460. Apple reminded Epic that it "reviews every app and app update to ensure that apps offered in the App Store are safe, provide a good user experience, adhere to [Apple's] rules on user privacy, and secure devices from malware and threats." *Id.* at -357. Apple explained that it had "identified several violations [by Epic] of the Apple Developer Program License Agreement." *Id.* at -357. These included violations of Sections 3.1(c), 3.2(f), 3.2.2. 3.3.3, 3.3.25, and 6.1 of the DPLA. *Id.* at -357–59. Apple therefore suspended Epic's membership in the Apple Developer Program. *Id.* at -359.

310. In the same letter, Apple once again informed Epic that it could cure its breaches and return to the App Store in good standing, giving Epic fourteen days to do so. DX-3460 at -359;

Schiller TT. Apple explained that failure to do so would result in termination of Epic's membership in the Developer Program as well as the termination of Epic's ability to access Apple's intellectual property. DX-3460 at -359.

311. Epic did not fix *Fortnite*. Schiller TT. Epic instead twice resubmitted *Fortnite* for review, first on August 20 and again on August 25. Schiller TT. Both of these *Fortnite* versions continued to avoid Apple's IAP. Schiller TT. Consequently, Apple terminated Epic's Developer Program account, as well as its Developer Agreement and DPLA with Apple, on August 28, 2020. Schiller TT.

O. Epic's disregard for its own customers is widely derided.

312. In the aftermath of Epic's implementation of the hotfix and *Fortnite*'s removal from the App Store, Epic received many complaints from its customers. A number of Twitter users, for example, complained about Epic's decision to violate Apple's Guidelines and get *Fortnite* removed from the App Store. One user commented in response to a quote from an article about Project Liberty "OMFG I hate epic." DX-5316 at -488. Another user requested that Epic "just temporarily remove direct payment so that we can play . . . in season 4," because Epic was "losing [its] players and money, it is a lose-lose situation." *Id.*

313. Users on Reddit, too, scorned Epic for Project Liberty, calling it a "publicity stunt" that highlighted Epic's "greed." DX-4147.

314. Commentators also highlighted Epic's decision not to challenge other platforms' commissions. DX-3745. "I think a fair reading of Sweeney's argument is that he's OK with Xbox, PlayStation, and Nintendo requiring a 70/30 revenue split because they deserve it, because they invest in hardware," one wrote. *Id.* at -482. That was "[n]ot a great argument." *Id.* "I'd say the saga of Fortnite for Android specifically shows that Google's Play Store does serve a role very much analogous to that of dedicated game console platforms," the author added. *Id.* "As for the main thrust of his 'game consoles are different' argument," the author wrote, "it is undeniably true that Apple makes a lot of money from iPhone and iPad hardware sales. And Google effectively makes most of its money, across its entire business, from ads. But '*Apple makes enough money from hardware and Google makes enough money from ads*' does not a compelling argument make, unless you're a pretty hardcore anti-capitalist, and Tim Sweeney does not exactly seem like an anti-capitalist. And in terms of the law, it seems generous to even call it *dubious*. It tastes like weak sauce even by the standards of sauce obtained from The Weak Sauce Store." *Id.* at -483.

P. Nevertheless, Project Liberty remains ongoing.

315. Despite the negative reaction to Epic's tactics, Project Liberty remains an ongoing effort. Shobin depo at 95:1–3. Since August 2020, there has been at least one weekly meeting for Project Liberty. *Id.* at 95:4–18. During this time, Epic has not considered challenging Microsoft's commission, Samsung's commission, or Sony's commission. Shobin depo at 95:19–96:8.

316. Epic has not attempted to submit to Apple a version of *Fortnite* that cures the deficiencies Apple identified in August 2020. Schiller TT.

Q. [redacted].

317. [redacted]

318. Epic has not attempted to repay the commissions it avoided with Epic Direct Payment. Schiller TT. Moreover, Epic rejected the Court's suggestion to disable the hotfix, agree to use IAP, relist *Fortnite* on the App Store, and deposit the commissions contractually owed to Apple into an escrow account. DX __ Sept. 28, 2020 Hrg. Tr. at 85: 10-86:10. While Epic acknowledged that it also could "put[] the 30 percent that is coming in from the small number of Apple users who are still in existence . . . into escrow," *id.* at 74:3-12, it has similarly declined to do so. Schiller TT.

XII. THE EVIDENCE DEMONSTRATES THAT THE APP STORE IS A TWO-SIDED GAME TRANSACTION PLATFORM

319. Two-sided transaction platforms have three fundamental features and each is a feature of the App Store. Schmalensee TT.

320. First, two-sided transaction platforms have as their main purpose the facilitation of observable transactions that simultaneously connect members of the two groups of users, often in sales transactions. Schmalensee TT.

321. Second, two-sided transaction platforms derive substantial value from strong bilateral indirect network effects. Schmalensee TT. Indirect network effects refer to the situation in which the value realized by members of one group of customers of a platform is higher when they have access to more members of the other group of customers with whom they could productively interact. Schmalensee TT.

322. Third, like other platforms, two-sided transaction platforms need to adopt pricing strategies, service provision strategies, and rules of behavior to attract two distinct groups of users and to facilitate productive interactions between them. Schmalensee TT.

323. Epic's experts agree that the App Store is a two-sided transaction platform and exhibits each of these features. Cragg depo. at 148:2–4; Evans TT.

A. The App Store facilitates digital transactions.

324. The App Store facilitates transactions that simultaneously involve developers and users—downloads, app updates, and in-app purchases that enchance the user's experience with the app. Cook TT; Schiller TT; Schmalensee TT. The App Store cannot make a sale to one side of the platform without simultaneously making a sale to the other. Schmalensee TT.

325. The App Store creates a platform through which developers can publish their apps and from which a user can download the application. Schmalensee TT.

326. Users gain greater value from the App Store with more selection in terms of quality apps, and app developers gain greater value from developing iOS apps for distribution through the App Store when there are more potential users on the other side of the platform. Schmalensee TT.

327. A successful interaction—a download, an app update, or an in-app purchase—will result in a transaction simultaneously provided to the developer and the user. Schmalensee TT.

B. The App Store derives substantial value from strong bilateral indirect network effects.

328. The App Store exhibits strong indirect network effects. Greater consumer participation makes the App Store more attractive to developers and greater developer participation means more high-quality iOS apps that make the App Store and iOS devices more attractive. Schmalensee TT.

329. In order to encourage consumers' use of the App Store, Apple does not charge consumers access or transaction fees on the App Store Platform. Schmalensee TT. When developers pay a nominal fee of $99 per year to participate in the Apple Developer Program, they can access an array of powerful tools to create high-quality apps and to offer them on the App Store, which in turn increases the value of the platform. Schmalensee TT. The availability of such apps makes iOS devices more attractive to potential users. Schmalensee TT. An increasing user base, in turn, helps attract additional app developers who are hoping to gain access to these users. Schmalensee TT.

330. The availability of apps and services in the iOS ecosystem contributes to the appeal of Apple devices. Schmalensee TT. To increase this appeal, Apple focuses on making sure that the App Store facilitates the discovery and purchase of new apps and in-app content of high quality, and that customers are satisfied with the App Store. Schmalensee TT. Apple has been successful: in a survey, Apple consumers noted being satisfied with the variety and "[e]ase of discovering new apps in the App Store," as well as the high quality of those apps. DX-3210, at -259.

331. Apple's continuous updates of its hardware also generate indirect network effects, because improving the devices that use a particular operating system will make that operating system more attractive to developers, which will in turn affect consumer demand. Schmalensee TT.

332. The App Review process itself generates indirect network effects by reassuring consumers that Apple's App Store is a safe and secure place for consumers to download apps. Schmalensee TT; Kosmynka TT. Developers, too, recognize that the review process creates value for the whole ecosystem. Schmalensee TT. As one developer stated, Android has "[n]o review process. Yes, it's easier on the developer, but it's detrimental to the whole ecosystem." DX-4626 at -241. Accordingly, Google has begun moving in the direction of

the App Store by adding human review (although not to every app or app update) and tightening its app screening and review process. Schmalensee TT; Rubin TT.

C. Apple has adopted pricing strategies, service provision strategies, and rules of behavior to attract both consumers as well as developers and to facilitate productive interactions between them.

333. Successful two-sided platforms must ensure that there are a large number of participants on both sides of the platform and that transactions on the platform are as easy, safe, and reliable as possible. These are defining characteristics of the App Store. Schiller TT.

334. Apple has consistently recognized that maintaining the App Store requires it to attract and retain both users and developers. Schmalensee TT; *see also supra* § IX. Apple competes vigorously for users and develeopers. *See supra* §§ VII & X.

335. Apple works very hard to attract and support game app developers on that side of the platform. Schmalensee TT; *see supra* §§ VII–IX.

336. Apple's technical support for its game developers is also recognized as industry-leading. *See supra* § VIII.

336.1 There are many examples of Apple undertaking extraordinary efforts to support various developers. Schiller TT.

336.2 With respect to Epic in particular, as detailed *supra* § X.C., Apple provided substantial technical support for Epic and *Fortnite* to persuade Epic to continue to devote resources to writing and improving iOS games.

337. Apple also provides its developers with business, marketing, and promotional support, free of charge—to ensure that they have success on the App Store. Schmalensee TT.

338. Apple works just as hard to attract users and keep the installed base of device users happy on the other side of the platform. In order to do so, Apple has to make sure its users are not worried about security or privacy, and that it is easy for them to find interesting apps. *See supra* § VIII.C–D; Schmalensee TT.

339. Apple has also continually improved the functionality and design of the App Store to keep iOS users engaged and active on the platform. *See supra* § VIII.D; Hitt TT.

340. Two-sided transaction platforms establish and enforce clear rules of behavior to prevent platform participants from reducing the value of the platform to others. That is another defining characteristic of the App Store. Schmalensee TT.

341. While the key tenets of the App Store Guidelines have remained consistent over time, some aspects of the Guidelines have evolved—and each change has benefited consumers and developers. *See supra* § VI; Schiller TT; Kosmynka TT.

XIII. THE APP STORE SUPPLIES ONE RELEVANT PRODUCT: GAME APP TRANSACTIONS

342. As a two-sided transaction platform, the App Store is thus best understood in the context of this case as supplying only one relevant product: game app transactions. Schmalensee TT.

343. Game app transactions make up a sizeable segment of all app transactions. Hitt TT. In 2018, for example, game app transactions accounted for $8.3 billion out of $13.2 billion—or 62.9%—in revenue from transactions on the App Store. Hitt TT. Game app transactions are distinct from other app transactions for at least seven reasons. Hitt TT; Lafontaine TT.

344. First, the industry and the public recognize a distinct market for digital game app transactions.

344.1 For example, many of the transaction platforms' user interfaces, including those of the App Store, Google Play, and the Amazon Appstore, reflect the distinction between game transactions and non-game transactions, often categorizing "games" into a separate tab of apps. Hitt TT; Lafontaine TT. This reflects the recognition by the platforms that consumers sometimes visit the platforms looking for games, and would benefit from having the games gathered in one location. Lafontaine TT. On the App Store in particular, editors consider a different set of factors when curating games than they do when curating other apps. Lafontaine TT.

344.2 The public, too, views games as distinct from other apps. For instance, game industry publications like Gamespot.com and gamesradar.com cover developments in games across the various game development platforms, including iOS, but do not generally cover developments in other apps. Schmid TT.

344.3 Apple's internal business structure also recognizes this distinction: At Apple, there were two heads of business development for the division spearheading the App Store—one for games and one for "all nongaming categories." Oliver depo. at 41:14–42:2; Hitt TT. Apple tracks the categories differently, as well; for instance, Apple routinely tracked "Games" billings separately from other elements of the App Store business. DX-4178 at -986; see also DX-4399 at -617 (same); DX-4593 at -215–16 (same).

345. Second, game app transactions are a distinct product because they exhibit peculiar characteristics and uses. Hitt TT; Lafontaine TT. Game apps provide a unique form of entertainment. Hitt TT; Lafontaine TT. Non-game apps serve a variety of other useful purposes. Hitt TT; Lafontaine TT.

346. Third, game app developers often use specialized technology to create game apps. Hitt TT; Lafontaine TT. For example, middleware tools like Unity and Epic's Unreal Engine are designed primarily for game developers. Hitt TT. As discussed above, there are several other technologies designed uniquely to improve game apps, such as Apple's "Game Kit" and "Game Center." *See supra* § VIII.B.

347. Fourth, game apps have distinct developers as game developers, including Epic, who tend to specialize in the development of game apps. Hitt TT. 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. Hitt TT. And many prominent game developers like Electronic Arts, Ubisoft, and Rockstar Games list *only* games or game-related content on the App Store. Hitt TT.

348. Fifth, game app transactions differ in pricing structure from other app transactions. Games, in general, monetize in different ways than do other apps. Lafontaine TT; Hitt TT.

348.1 For instance, game apps make nearly all of their in-app purchase revenue from non-subscriptions. Lafontaine TT; Hitt TT. This differs from other major categories of apps. Lafontaine TT; Hitt TT. Music, fitness, and some other apps make virtually all of their revenue from subscriptions. Lafontaine TT; Hitt TT.

348.2 There also is considerable variation in the average transaction price between app genres, and, in particular, between game apps and other apps. Hitt TT. 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. Hitt TT.

348.3 Similar variation is found in the average download price for apps. Hitt TT. Including free-to-download apps, game apps have an average download price of $0.03. Hitt TT. Other major categories of apps have an average download pricing ranging between $0.00 (for social networking apps) to $0.10 (for education apps)—more than three times as high as the average transaction price for game apps. Hitt TT. Similar trends hold when only pay-to-download apps are considered. Hitt TT.

349. Sixth, game apps are distributed by specialized vendors. The set of transaction platforms and devices available for game apps differs from the set of transaction platforms for all apps. Hitt TT; Lafontaine TT.

349.1 Some of these devices are specifically designed for games and not other kinds of apps. Hitt TT; Lafontaine TT. For instance, all the main consoles—PS4, Nintendo Switch, and Xbox One—are designed with gaming as their primary purpose. Hitt TT. Their controllers are meant for gaming.

349.2 Similarly, other game transaction platforms focus almost exclusively on game transactions, including the PlayStation Store, Nintendo eShop, and EGS. Hitt TT; Lafontaine TT. These platforms do not offer other kinds of apps that are commonly available on PCs, Macs, iPads, and phones, like Microsoft Office or sophisticated photo-editing software. Hitt TT.

349.3 There also are some devices and transaction platforms for other types of apps that may not be substitute platforms for game transactions. For example, apps like Spotify can be used on smart speakers or smart home devices (e.g., Google's Home or Amazon's Echo) while most games cannot. Hitt TT.

350. Seventh, platforms providing game app transactions are subject to unique and emerging competitive pressures, such as cloud-based streaming services. Schmalensee TT. For instance, Nvidia's GeForce Now platform became available in February 2020 and allows players to stream games through web browsers or the GeForce Now client. Schmalensee TT. This soon will include *Fortnite*. Sweeney TT. Fand hasIn the same way, non-game-apps are subject to different competitive pressures, and are affected by new technologies and devices, like Fitbit, that may not affect game apps. Hitt TT.

XIV. THE APP STORE AND OTHER GAME TRANSACTION PLATFORMS ARE SUBSTITUTES

A. For developers, game transactions on other transaction platforms are substitutes for game transactions on the App Store.

351. Many developers make game transactions across several game transaction platforms simultaneously. Hitt TT. 60% of iOS developers tend to develop apps for other mobile operating systems and/or platforms as well, and large and mid-tier developers are even more likely to do so. DX-4321 at -035. In every size tier of developers, games are the most commonly developed apps. *Id.* at -031.

352. Development across platforms is particularly pronounced among top game developers. Data from App Annie shows 83% of the top 100 downloaded iPhone game apps were available on both the App Store and Google Play; among the top 100 downloaded Android phone game apps, 95% were available on both platforms. For the top 100 game apps by estimated revenue from paid downloads and in-app purchases, the corresponding figures are 99% and 100% respectively. Hitt TT. [redacted]

353. To take just two examples of highly successful games that are available on the App Store *and* many other transaction platforms: Minecraft, one of the best-selling video games of all time, is on the App Store as well as virtually every other game transaction platform, such as Google Play, the Microsoft Store, the Nintendo eShop, and the PlayStation Store. Hitt TT. [redacted] And Roblox, another hugely successful game, is available on the App Store as well as the Microsoft Store, the Amazon Appstore, and Google Play, with purchases being made on each of these platforms. Hitt TT.

354. Indeed, new technologies, including evolving video game developer tools, have enabled developers to create games for a broader set of platforms—making substitution increasingly easy. Hitt TT. For example, the Unity engine supports development for 20 platforms, allowing developers to create one software build that can be distributed on any of Unity's supported platforms. Hitt TT. Similarly, developers using the Unreal Engine may distribute exclusively on the App Store, exclusively on another platform, or on both iOS and other platforms. Grant TT; Hitt TT.

355. Epic can and does distribute *Fortnite* through a variety of channels. Hitt TT. *Fortnite* is available through the Epic Games Store, the Nintendo eShop, the Xbox Marketplace, the PlayStation Store, the Samsung Galaxy Store, and GeForce Now, and was previously available on the App Store and Google Play. Hitt TT. As one of Epic's board members put it, *Fortnite* is "multi platform to the core." DX-3786 at -889. Epic's multiplatform release of *Fortnite* is an example of the many distribution options available to videogame developers.

355.1 Prior to being released on iOS in March 2018, *Fortnite* had already attracted almost 64 million user accounts on PlayStation, Xbox, and PC. Hitt TT. The single largest *Fortnite* platform is, and has been, PlayStation. Hitt TT. iOS was usually the fourth most popular *Fortnite* platform. Hitt TT. And *Fortnite* continued to grow on other platforms following the iOS release—for instance, *Fortnite* rapidly became successful on the Nintendo Switch following the game's launch on that platform in June 2018. Hitt TT.

355.2 Epic agreed to keep identical pricing across Microsoft, Sony, and Nintendo for V-Bucks, acknowledging that those companies were concerned about competition from mobile or PC platforms for transactions. "Making it more advantageous to buy on mobile than on Console is not an option," Epic wrote. DX-3364 at -047. [redacted] Epic has even kept the price of V-Bucks higher on PCs to prevent its consumers from engaging in arbitrage between platforms. Vogel depo. at 102:2–03:12. Epic's VP of Business Development has described the company's pricing restrictions as "a little anticompetitive." Kreiner depo. at 180:3–22.

355.3 Epic encouraged users who previously played *Fortnite* on iOS to play on other platforms after Apple prevented users from downloading *Fortnite* through the App Store. Hitt TT. Users have done so, spending far more time on alternative platforms than iOS. Hitt TT.

355.4 Epic's post-*Fortnite* "case study" assessing iOS *Fortnite* players' behavior after *Fortnite* was removed from the App Store does not demonstrate a lack of substitutability between game app transaction platforms. First, it applies only to Epic's specific circumstance and does not estimate a market-wide event. Hitt TT. It created an anomalous situation where iOS users had access to an old version of *Fortnite*, but not a new one, at the same time that *Fortnite* was removed from Google Play, leaving smartphone consumers with few means of playing *Fortnite*. Hitt TT. Meanwhile, all other substitute games continued to be available to iOS users. Hitt TT. Thus, the "case study" cannot predict what would happen on an App Store-wide level if Apple had increased the price of game transactions. Hitt TT.

356. Epic has benefited from the competition among game app transaction platforms. For instance, it obtained substantial marketing and tech support benefits from Apple. *See supra*

§ XI.C. Epic expected and sought those benefits in explicit exchange for launching *Fortnite* on iOS before Android. DX-3732 at -480. [redacted]

357. [redacted]

B. For consumers, game transactions on other transaction platforms are substitutes for game transactions on the App Store.

358. Consumers of game apps own multiple devices and have access to multiple game platforms that are reasonably interchangeable *for the purpose of game transactions*. Hitt TT; Hanssens TT.

359. Public and internal surveys substantiate significant cross-ownership of devices. For instance, a 2019 Pew Research Center study showed that 81% of U.S. consumers own a smartphone, 75% own a desktop or laptop computer, and about 50% own a tablet. Hitt TT. Dr. Athey opines that consumers own at least 2-3 general purpose devices. Athey TT. And internal Apple surveys show that among iOS device owners, about 30–40% own a Mac notebook or desktop, 55–65% own a Windows PC laptop or desktop, 20–30% own a game console, and around 21–22% own a non-iPad tablet. Hitt TT; DX-3174 at -361–62; DX-3773 at -448–49; DX-3465 at -298–307. Dr. Evans estimates that up to 44% of U.S. iPhone users also use a Mac computer, Evans TT, a platform described by Epic as an "open market." Dkt. 1 ¶ 4.

360. Market research on gamers in particular has found that around 55 to 60% of U.S. gamers play games on more than one device, with almost 30% playing in more than two devices. Hitt TT; DX-4170 at -131. The same research shows that 56% of gamers play on mobile devices and "at least one other platform," and 27% "play on Mobile, PC & Console." *Id.* at -132–33.

361. A survey conducted for this matter confirmed that individuals that use the App Store, including to download games, have access to alternative devices and platforms. Among consumers who transact through the App Store, 71% regularly use a laptop, 48% regularly use a desktop, 41% regularly use a game console/handheld game device, 27% regularly use a non-iOS smartphone, and 23% regularly use a non-iOS tablet. Hanssens TT; Hitt TT. This means an overwhelming majority (81%) of App Store users regularly use a device besides their iOS device. Hitt TT.

362. The same survey, considering more broadly both devices regularly used and devices one could access to use, found that 86% of App Store users regularly use or had available a

laptop, 64% a desktop, 61% a console/handheld game device, 56% a non-iOS smartphone, and 48% a non-iOS tablet. Hanssens TT; Hitt TT. That means 95% of App Store users regularly use, or could have used, a device besides their iOS device. Hanssens TT; Hitt TT.

363. Consumers not only have access to and use multiple devices; they also use those various devices to make game transactions. Hitt TT; Lafontaine TT. For example, 22.5% of Minecraft's 2020 purchases were on Android devices; 22.9% on iOS devices; and the remainder on PC, consoles, and others. Hitt TT.

364. *Fortnite* illustrates the substitutability of game transaction platforms for the purpose of making transactions from consumers' perspectives. Hitt TT.

365. Among consumers who used iOS to play *Fortnite*, 80% regularly used a laptop, 59% a desktop, 79% a console/handheld game device, 38% a non-iOS smartphone, and 33% a non-iOS tablet. Hanssens TT. Among these consumers 57% used their laptops to play games, 41% used their desktops, 79% used game consoles/handheld game devices, 27% used a non-iOS smartphone, and 18% used a non-iOS tablet. Hanssens TT. In total, 94% of iOS *Fortnite* players regularly use other devices besides their iOS devices and 94% of iOS *Fortnite* players regularly play games on devices other than their iOS device. Hanssens TT; Hitt TT.

366. Because of *Fortnite*'s cross-play capabilities, these consumers could access *Fortnite*—at least until Epic's hotfix—and enjoy a comparable experience on their iOS device and a different device. Hitt TT; Sweeney TT. As Mr. Penwarden testified during his deposition, "[a] Fortnite player can choose to play on their phone in the morning and on a console in the evening if that's what they so choose." Penwarden depo. at 137:7–9. Epic "run[s] the same content—or substantially similar content and same game across multiple platforms." Penwarden depo at 136:3–7. Indeed, Epic touted "Perfect Cross Play" for *Fortnite* through which "[o]ne account will give you the same gaming experience on any platform, anytime, anywhere." DX-3957 at -098.

367. For *Fortnite* and the many games like it on the App Store that have cross-wallet and cross-progression functionality, an iOS user need not *ever* make a single paid transaction on the App Store to enjoy all the paid features of the game on an iOS device. Hitt TT. That is because a consumer could purchase *Fortnite*'s paid content (like V-bucks) on any platform—including the Epic Games Store—and then use that content while playing the game on an iOS device. Sweeney TT. Apple thus imposed no restriction on consumers' ability to switch between platforms feely. Hitt TT; Penwarden depo. at 136:20–37:9.

368. Epic's user data from March 2018 to July 2020 shows that *Fortnite* users exemplify the substitutability of game transactions across game transaction platforms. Hitt TT. During that timeframe, 35.9% of users that played *Fortnite* on iOS devices also played *Fortnite* on another device. For certain platforms, the share of users that accessed *Fortnite* through a second (or more) platforms ranged to as high as 32–54%. Hitt TT.

369. Consumers also engage in *Fortnite* transactions across a number of platforms, with the PlayStation 4 generating 46.8% of total *Fortnite* revenues from March 2018 through July 2020 and Xbox One generating the second highest share of revenues at 27.5%. DX-4766. iOS ranked fifth among all Fortnite accessible platforms in terms of revenue, with just 7.0% of total revenue. DX-4766.

370. Users who accessed *Fortnite* from more than one platform—called "multi-homers"—were responsible for a disproportionate number of transactions. Hitt TT. Between January and July 2020, for example, iOS multi-homers accounted for 86.7% of *Fortnite* revenue from iOS device users while iOS single-homers accounted for only 13.3%. Hitt TT. What is more, 15.8% of iOS *Fortnite* users made paid transactions exclusively *outside* the App Store. Hitt TT. By comparison, only 5.6% exclusively used the App Store and 2.8% used both the App Store and another platform. Hitt TT. The majority of iOS users made no paid transaction at all. Hitt TT.

371. There also are multiple, specific examples that demonstrate iOS users could and did in fact switch between platforms to make transactions for *Fortnite*. Hitt TT.

372. [redacted]

373. There is similar evidence of substitution following the launch of *Fortnite* on the Nintendo Switch in June 2018. Hitt TT. Epic's user data shows that before the launch, iOS users accounted for approximately 29% of *Fortnite* revenue. Hitt TT. That figure steadily dropped in the four months following the *Fortnite*'s launch on Switch, falling to 24% in September 2018. Hitt TT. Over that same time, Switch users grew to account for 21% of *Fortnite* revenue. Hitt TT.

374. Epic's user data reveals a similar pattern with respect to the share of time played on *Fortnite*. Hitt TT. From May 2018 to September 2018, iOS users' share time fell from 23% to just 9%. Hitt TT. That corresponded with an increase from 0% to 31% for users on Nintendo Switches. Hitt TT.

375. Thus, Epic's user data shows iOS *Fortnite* users substantially switched the amount of time and money they spent from iOS to Nintendo Switch following the introduction of *Fortnite* on the Switch. Hitt TT. This is consistent with more general data from the App Store: The amount spent on gaming transactions on the App Store grew more slowly for consumers that downloaded a gaming console or PC app—such as the Xbox app or Nintendo Switch Online app—than those who did not. Hitt TT.

376. Epic understood these dynamics as its "Free *Fortnite*" campaign shows. Hitt TT. Following the removal of *Fortnite* from the App Store, Epic told its users they could and should play *Fortnite* on other platforms—clear proof that Epic understood its users could

substitute between platforms to make transactions for *Fortnite*. Hitt TT. Epic in fact retained the vast majority of iOS *Fortnite* users' pre-Hotfix revenue in the four months after the Hotfix, in large part due to this multi-homing by consumers. Hitt TT . Epic likely would have retained a greater share had it released the next *Fortnite* season on macOS—as 44% of all iOS users also have a Macintosh computer. Hitt TT; Evans TT. Epic chose not to do so. DX 0440, at 2.

C. Apple competes with other game transaction platforms.

377. The App Store competes with other game transaction platforms on different types of devices, including consoles, PCs, and mobile devices. Hitt TT; Cook TT; *see also supra* § X.

378. Apple recognized immediately that gamers are an important source of growth and has competed aggressively to attract app developers that develop popular videogames, such as Epic. Schiller TT.

379. Apple's records demonstrate that it has continued to treat the App Store as in direct competition with game transaction platforms geared toward consoles, PC games, and mobile devices. Hitt TT; *see also supra* § X.

380. Apple has always viewed Google Play as a significant competitor, including with respect to games transactions. Hitt TT; *see also supra* § X. There is evidence of platform competition with the Samsung Galaxy store, as well. Hitt TT; *see also supra* § X. And Apple competes with at least the three major game console platforms for game transactions. Hitt TT; *see also supra* § X.

381. [redacted] These competing platforms' perspectives are relevant because they indicate that they understand consumers view game app transactions on the App Store as substitutes for transactions on their own platforms. Lafontaine TT.

382. Epic itself considers the App Store and other game platforms to be substitute transaction platforms. Hitt TT. For instance, when planning the launch of *Fortnite* on mobile platforms, Epic decided to "focus [its] engineering efforts" on iOS instead of trying to launch *Fortnite* on both iOS and Android simultaneously. DX-3732 at -479–80. Epic also thought it would receive "extra support" for *Fortnite* from Apple compared to Google. *Id.* at -478–79. Indeed, Epic's iOS Infinity Blade game was originally intended to be an Xbox game, demonstrating that Epic treats game transaction platforms as substitutes when creating games. Hitt TT.

383. As early as 2012, Mr. Sweeney remarked publicly, "we have a lot of platforms coming together, there are the tablet platforms, there are the smartphone platforms, then computers, you know PC and Macintosh, and then there are consoles, Xbox 360, PlayStation 360, 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 – there might be 1 or 2, maybe 3 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." DX-3768 at 26:00.

XV. THE EVIDENCE DOES NOT SUPPORT A SINGLE MARKET IN "iOS APP DISTRIBUTION"

384. Epic has failed to prove the existence of a single market in "iOS App Distribution."

385. Epic has failed to prove that apps in general, and iOS apps in particular, are all similarly situated with respect to the competitive conditions each type of iOS app faces on other platforms and through other services.

386. Clustering is an economic and legal concept that refers to the combination of individual product markets where products may be bought and sold independently. Lafontaine TT.

387. A classic example of clustering involves hospital services. Hospitals offer many distinct products and services, ranging from specialized surgery with few if any substitutes, to tests that can also be obtained at outpatient facilities, to medicines that are sold over the counter at ordinary supermarkets and drug stores. Lafontaine TT.

388. Epic is attempting to cluster otherwise independent product markets in a single market. Such clustering is permissible only if competitive conditions are similar for the individual product markets.

389. Game and non-game apps cannot be clustered in the same relevant market because the competitive alternatives available to game developers and consumers who play games are different than those available to other app developers and consumers. Lafontaine TT; Hitt TT. The frequency with which apps are free-to-download; monetize through the App Store; and monetize through in-app purchases, subscriptions, or both differs among different genres of apps. Hitt TT. The average transaction price charged by developers also differs between game and non-game apps. Hitt TT. And due to the different monetization strategies, commission rates differ between game and non-game apps as well. Hitt TT.

390. In addition, the evidence shows that competitive conditions are similar for game transactions while they differ from other apps. *See supra* §§ X.B & XIII; Lafontaine TT.

XVI. THE EVIDENCE DOES NOT SUPPORT EPIC'S EFFORT TO NARROW THE RELEVANT MARKET TO AN iOS AFTERMARKET

391. Epic's Complaint alleges that "Apple mobile device customers" are "locked in to Apple's ecosystem," Dkt. 1, ¶ 159, and does not even mention an "aftermarket." Contrary to the complaint, Dr. Evans advances a *different* relevant market theory, of a foremarket for

smartphone operating systems, tied to an alleged aftermarket for iOS app distribution services. Evans TT.

392. The evidence does not support either attempt—in the Complaint, or as conceived by Dr. Evans—to define the relevant market as an iOS aftermarket. Hitt TT.

A. Apple does not sell a smartphone operating system.

393. There is no foremarket for "smartphone operating systems" in which Apple competes because Apple does not sell "smartphone operating systems." Evans TT. Apple "designs, manufactures and markets mobile communication and media devices and personal computers, and sells a variety of related software, services, accessories and third-party digital content and applications." DX-3271, at 4. In other words, Apple sells *devices*, which are fully integrated into the iOS ecosystem and include the operating system and App Store. Cook TT; Schiller TT.

394. Just as Apple does not sell "smartphone operating systems," consumers do not purchase operating systems. Hitt TT; Lafontaine TT. Indeed, iOS cannot be purchased or upgraded at any price separately from purchasing a device. Hitt TT.

394.1 The iPhone competes with dozens of smartphones designed and marketed by multiple well-funded smartphone manufacturers. Lafontaine TT. These competitors consistently release new models, and if the iPhone were not a competitive offering (i.e., if Apple charged too high a quality-adjusted price, or did not continuously develop its technology and designs to attract new smartphone users or switchers), then its customer base would quickly evaporate. Lafontaine TT. This, in turn, would have adverse network effects on the App Store. Schmalensee TT; Lafontaine TT.

394.2 The competition in the smartphone market imposes constraints on Apple. Lafontaine TT.

395. In addition, even under Epic's own market definition theory, iOS app distribution would have to include tablet distribution as well. Hitt TT. Consumers and developers can transact both on iPhone and iPads through the App Store. Schiller TT; Hitt TT. Developers use the same tools to create apps for iPhone and iPads, and developers can provide apps that are compatible with both iPhones and iPads. Federighi TT; Evans TT. Many apps on the App Store can be downloaded on either an iPhone or an iPad, and, when consumers purchase a paid-to-download app on an iPhone, they can install it on an iPad (and vice versa) without making an additional purchase. Hitt TT.

B. Game consumers are not locked into any relevant foremarket, whether the device, as Epic alleges, or the operating system, as Dr. Evans argues.

396. The App Store rules at issue in this case have not changed since the App Store was introduced in 2008: iOS has always been a closed system, and the App Store has been a "walled garden" since inception. DX-3177 at -075–86; Lafontaine TT. Consumers have

easy access to information about game transactions—they can read extensive information about game options on iOS online. Lafontaine TT.

397. Consumers of games are not locked into a single durable foremarket product. Lafontaine TT. Rather, they multi-home across devices and have other alternatives for accessing various game transaction platforms. Lafontaine TT.

398. iOS users who play games typically multi-home across devices. Lafontaine TT; Hitt TT.

398.1 As discussed above, consumers have access to many game app platforms. Hitt TT; Schmalensee TT. Most smartphone owners, including owners of iOS devices, also have a personal computer and about half have a tablet. Hitt TT; DX-3773 at 448–49; *see also supra* § XIV.B. Professor Hanssens' survey shows that 95% of App Store users regularly used or have available another device besides their iOS device. Hanssens TT.

398.2 These trends apply to consumers who participate in game transactions as these gamers not only have multiple devices but also play games on multiple devices. Hitt TT; Hanssens TT; *see also supra* § XIV.B. Indeed, this was the very "magic of the experience" that Epic and other developers sought to create: "[E]veryone can play together with all of their friends. In a single living room you can have a PlayStation player, someone on their laptop, someone on an iOS device, and someone on an Android device all playing in a single game session together." DX-4002 at -513.

398.3 Significantly, consumers can *purchase* games and in-game content on multiple platforms they own or have access to. Lafontaine TT; *see also* Hitt TT. For example, a consumer who owns a game console has the opportunity to enter into a game transaction—i.e., participate in the relevant antitrust market—using their console rather than their iOS device. Lafontaine TT.

398.4 As discussed above, empirical evidence shows that consumers do in fact make game transactions across multiple devices and through different game transaction platforms. Hitt TT; *see also supra* § XIV.B.

398.5 Gamers that play *Fortnite* illustrate this phenomenon: While the majority of *Fortnite*'s iOS users do not make any paid *Fortnite* transactions on any devices, for those that do make paid transactions, it is often on competing game transaction platforms, not the App Store. Hitt TT. Almost twice as many of *Fortnite*'s iOS users transacted *exclusively* outside the App Store than transacted inside the App Store (exclusively or as one of multiple platforms). Hitt TT.

399. [redacted]

399.1 By some estimates, as many as 78 million people in the United States may purchase a new smartphone each year. Hitt TT.

399.2 Apple competes with Android smartphone manufacturers for each of those purchases. [redacted] As an economic matter, this is a meaningful number of consumers. Hitt TT. Switching costs between iOS and Android devices have declined over time. Schiller TT.

399.3 That 74–93% of iOS users choose not to switch to Android when they upgrade their phones is not evidence of lock-in in any event. Hitt TT. Purchasers of a new iPhone often are satisfied with their iPhone purchase, and thus may simply prefer the iOS ecosystem compared to Android devices. *Id.*; *see also supra* § VIII (discussing the significant investments Apple has made in improving the iOS ecosystem for consumers). Epic's experts do not consider device satisfaction in offering their opinions on lock-in, nor do they attempt to quantify or otherwise measure switching costs. Athey TT.

399.4 [redacted] Similarly, a 2015 Apple survey on Android to iPhone switchers found that the top reasons consumers switched to an iPhone were reliability and speed, followed by quality device construction, durability, and battery. DX-3441 at -533–34; *see also* Hitt TT.

399.5 [redacted]

399.6 [redacted] To the contrary, iPhone owners consistently exhibit a high degree of satisfaction. Hitt TT; *see also* DX-4392 at -438 ("A high percentage of FY20-Q1 buyers are satisfied with their new iPhone."); DX-4495 at -363 ("85% or more are satisfied with their iPhone in most markets.").

400. Consumers can make digital game transactions, including in Epic's apps, without acquiring an alternative device. Hitt TT. Even consumers with a single device may have access to multiple platforms. Lafontaine TT. It is easy to use an iPhone to buy V-Bucks, for example, from Epic's website using the Safari or Chrome browsers. Lafontaine TT. Epic is not alone: Developers typically have multiple ways to transact with consumers who play games. Lafontaine TT.

C. There is no reliable evidence that Apple's conduct has increased user switching costs and mixing and matching costs, as described by Dr. Athey.

401. Dr. Athey opines that Apple's alleged restrictions have increased switching costs or user mixing and matching costs. Athey TT; Rubinfeld TT. But these alleged costs disregard

industry realities, are based on a but-for world that has not been properly specified and Dr. Athey has made no effort to measure or quantify the costs she identifies. Athey TT; Rubinfeld TT.

402. In rendering her opinions, Dr. Athey did not cite to any economic literature addressing switching costs, including any literature indicating that competition is always maximized when switching costs are reduced to zero, nor did she evaluate competition in a hypothetical scenario where switching costs would be zero. Athey TT.

403. Dr. Athey's opinion is also devoid of any evidentiary support. Athey TT; Schmalensee TT.

403.1 Dr. Athey did not perform any quantitative analysis or original surveys to determine the amount of increased switching costs that she contends are caused by the alleged Apple restrictions. Athey TT. Dr. Athey provides no evidence quantifying any frictions that might arise when moving apps, purchases, or user data across mobile platforms and, accordingly, create significant app-related switching costs. Athey TT.

403.2 Dr. Athey also did not evaluate whether Apple's alleged restrictions would increase the time it takes to switch from an iPhone to an Android, nor did she determine the amount of time that it takes to switch from an iPhone to an Android. Athey TT. Indeed, Dr. Athey provides no evidence of the dollar estimate for switching from an iPhone to an Android phones at multiple price points or any evidence for the time and cost that would be incurred in order for a user to identify and re-install apps on a new mobile operating system after switching from iOS to that new platform. Athey TT. Nor did Dr. Athey calculate the average amount of apps that must be repurchased when moving from iOS to a new operating system. Athey TT. Finally, Dr. Athey did not determine the number of apps that a user would be required to repurchase if moving from iOS to a new platform. Athey TT.

404. Dr. Athey's assertion that removing Apple's design decisions, policies, and rules regarding the App Store, app review process, and app standards would reduce user switching costs ignores the possibility that each platform on which an app operates may require some form of customization in order to operate on that platform. Hitt TT. Dr. Athey acknowledges that, to operate on iOS, her proposed "economic middleware" would connect to the operating system through APIs. Athey TT. She further acknowledges that multiplatform app stores, as economic middleware, "would subsequently interact" with the operating systems on which they would be operating. Athey TT. Yet Dr. Athey does not address whether switching costs would still be reduced if each multiplatform app store utilizes different APIs or whether multiplatform app stores can ensure compatibility across different platforms. Hitt TT; Schmalensee TT.

405. Dr. Athey's demand for forced interoperability also ignores the reality that cross-device functionality is already common for apps today. Hitt TT.

D. Game developers are not locked into any relevant foremarket, whether the device, as Epic alleges, or the operating system, as Dr. Evans argues.

406. Apple's terms with developers have been consistently and clearly communicated to developers. Lafontaine TT. These terms—specifically including Apple's policies regarding sideloading, its commission, and stores-within-stores—have not become more restrictive since their inception. Schiller TT. To the extent developer-facing terms have changed at all, it has been to developers' benefit (e.g., lowering some commissions). *See supra* § VII.C; Hitt TT.

407. Like consumers, game developers are not invested in a single durable "smartphone operating system" product. Lafontaine TT. Game developers instead "multi-home" by developing apps for, and offering them for download on, multiple game transaction platforms. Hitt TT; Lafontaine TT.

408. Apple does not demand developer exclusivity, nor does it restrict the prices that developers charge on other platforms. Lafontaine TT. And as explained in detail above, *see supra* § XIV.A, extensive empirical evidence shows that many developers—especially larger developers—that create games for the App Store also develop games for other platforms and other operating systems reach consumers through those platforms. Hitt TT; Schmalensee TT.

409. For example, 83 of the top 100 downloaded iPhone game apps in 2019 were available on both the App Store and Google Play. Hitt TT. Among the top 100 downloaded Android phone game apps, 95 were available through both platforms. Hitt TT. For the top 100 game apps by estimated revenue from paid downloads and in-app purchases, the corresponding figures are 99 and 100 percent, respectively. Hitt TT.

410. So too for the top 25 game apps (by revenue) available on the App Store. Hitt TT. [redacted]

411. As but a few examples, Minecraft, one-of the world's best-selling video games, is available on the App Store, Google Play, Microsoft Store, Amazon Appstore, Nintendo eShop, and PlayStation Store, as well as directly from Minecraft's website. Hitt TT. Roblox, a game with 150 million monthly active users in May 2020, is available through the App Store, the Microsoft Store, the Amazon Appstore, and Google Play. Hitt TT. And for *Fortnite*, Epic uses the Epic Games Store for *Fortnite* game transactions on Windows PCs, Windows tablets, and Mac computers; the Nintendo eShop for *Fortnite* game transactions on Nintendo Switch and Switch Lite; the Xbox Marketplace on the Microsoft Store for *Fortnite* game transactions on Microsoft's Xbox One, Xbox Series X, and Xbox Series S; the PlayStation Store for *Fortnite* game transactions on PS4 and PS5; the Samsung Galaxy Store for *Fortnite* game transactions on Samsung-brand Android smartphones and tablets; and GeForce Now, a game streaming platform that consumers can access on a variety of

devices including Macs, PCs, Chromebooks, Android devices, and iOS devices (in addition to, of course, the App Store and Google Play Stores prior to Epic's implementation of the hotfix). Hitt TT.

412. Indeed, game developers choose the particular platforms for which to develop and release their games. Hitt TT. Depending on the size of the platform audience, the available developer tools, and numerous other factors, developers allocate resources across different transaction platforms based on their relative advantages. Hitt TT.

413. For example, when discussing the launch of *Fortnite* on mobile platforms, Epic decided to "focus [its] engineering efforts" on iOS—for which there was less "risk in . . . compat[ability]&perf[romance]"—as opposed to launching *Fortnite* for both iOS and Android devices simultaneously. DX-3732 at -479, -480. Epic even expected to leverage their focus on iOS to obtain "extra support" from Apple, *id.* at -480, underscoring Apple treatment of Google Play as a competing transaction platform, Hitt TT.

414. Moreover, developers can and do utilize substitute game transaction platforms to sell content to iOS users that can be used on their iOS devices. Hitt TT. 81% of iOS users regularly use other non-iOS devices where other game transaction platforms are available. Hitt TT. And game developers can make the content acquired though such transactions available for use on a customer's iOS device. Hitt TT.

415. Again, *Fortnite* demonstrates how Epic can make transactions with iOS device users through alternative game transaction platforms. Hitt TT. Virtually all *Fortnite* users on iOS regularly use other devices that could be used to play *Fortnite* and conduct in-game purchases, and users who accessed *Fortnite* on iOS spent most of their time and money in regard to *Fortnite* on non-iOS devices and through game transaction platforms other than the App Store. Hitt TT. These transactions are facilitated by the cross-wallet and cross-progression functionality permitted by Apple. Hitt TT.

416. Because developers have the ability to substitute between the App Store and other platforms, they are not locked in to the App Store. Hitt TT.

E. Dr. Evans's hypothetical monopolist tests fail to properly account for indirect network effects, invalidating his conclusions about the relevant antitrust product markets.

417. Dr. Evans advances a hypothetical monopolist test ("HMT") that, he says, purports to show that iOS operating systems and iOS app distribution are a relevant antitrust foremarket and aftermarket, respectively. Evans TT.

418. An HMT is typically used to determine the relevant antitrust market when evaluating mergers. Lafontaine TT. It asks whether a hypothetical monopolist in a candidate market could impose a small but significant and non-transitory increase in price ("SSNIP") on its products, without causing so many customers to switch to a more affordable substitute that the price hike is no longer profitable. Lafontaine TT. If the answer is yes, then the candidate market is the relevant antitrust market. Lafontaine TT. If the answer is no, then the candidate market is too narrow. Lafontaine TT.

419. The HMT is typically applied to *one-sided* markets. Schmalensee TT. Conducting an HMT for *two-sided* platforms—like smartphone operating systems, app distribution, and in-app purchase payment processing—is much more complex, and requires multiple inputs that may be difficult to estimate. Schmalensee TT.

420. This is because two-sided platforms often exhibit indirect network effects. Schmalensee TT. As discussed above, these effects are particularly pronounced in two-sided transaction platforms like the App Store. Schmalensee TT.

421. Indirect network effects create feedback loops, such that even small changes on one side of the market can, in the long run, cause large changes in the overall popularity of the platform. Lafontaine TT. For example, a price increase on side A of a platform will reduce participation on that side. Schmalensee TT. While this initial impact may be small, it will *also* make the platform less attractive to participants on side B, leading to decreased participation on *that* side. Schmalensee TT. This, in turn will reduce participation on side A, and so on. Schmalensee TT. Since the HMT turns on responses to price increases, ignoring indirect network effects will generally lead to markets that are too narrow. Schmalensee TT.

422. There is no consensus among economists about how to design HMTs to properly account for these indirect network effects. Shmalensee TT. While Dr. Evans has proposed one approach, another economist believes it is conceptually flawed. Schmalensee TT.

423. Even assuming Dr. Evans's method is correct, the opinions he offers in this case do not meet his own standards. Schmalensee TT. In his own academic work, 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. Schmalensee TT. He has not followed that methodology here. *Id.*

424. First, Dr. Evans conducts his foremarket and aftermarket SSNIP tests on the consumer side and on the developer side separately. Evans TT. 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. Evans TT. Notably, Dr. Evans does not perform *any* actual SSNIP calculations testing both sides of the market simultaneously, as required by his own research. Evans TT.

425. Moreover, *none* of Dr. Evans's tests use the minimum 14 inputs required by his own methodology. Schmalensee TT. His foremarket SSNIP test uses only two inputs on the customer side, and just one on the developer side. Schmalensee TT. And his aftermarket SSNIP test uses only four inputs on the consumer side and just one on the developer side. Schmalensee TT.

426. Dr. Evans's single-sided SSNIP tests—that is, those that purport to measure the effect of price changes on only one side of the platform—are also flawed. Lafontaine TT.

427. First, Dr. Evans claims that a hypothetical monopolist of smartphone operating systems could raise price by a SSNIP to consumers, holding the developer price and app supply

constant. Lafontaine TT. This test suffers from several critical conceptual and methodological flaws and should be disregarded. Lafontaine TT.

428. As Dr. Evans acknowledges, consumers do not buy smartphone operating systems separately from smartphones. Lafontaine TT. There is no price charged to consumers for iOS or the Android operating system. Lafontaine TT; Evans TT. Nevertheless, Dr. Evans proceeds to "test" the consumer side of his alleged market, which he claims is a two-sided transaction platform. Lafontaine TT. Thus, despite his purported focus on *iOS consumers*, he bases his SSNIP on the prices *Microsoft* charged to *manufacturers* for smartphone and PC operating systems in 2012 and 2009. Evans TT. Even though he purports to evaluate the profitability of a SSNIP to smartphone *operating systems*, Dr. Evans then considers whether the SSNIP would result in substantial consumer substitution to other *devices*. Evans TT.

429. Had Dr. Evans not artificially separated smartphone operating systems from the purchase that consumers actually make in his purported foremarket—the smartphone—the SSNIP would be based on substantially higher prices. Lafontaine TT.

430. In his second "test," Dr. Evans claims that a hypothetical monopolist of smartphone operating systems could profitably raise price by a SSNIP to developers, holding consumer prices and usage constant. Evans TT. He claims that smartphone operating systems charge developers for access to the development tools necessary for writing compatible apps, a fee that he characterizes as "nominal." Evans TT. In particular, he uses Apple's $99 annual developer fee and argues that a 10 percent SSNIP (i.e., a price increase of $9.90) would be "negligible compared to the annual costs of any commercial developer" and that it "could not have any plausible impact on the decision of any developer of more than completely trivial size regarding whether to develop smartphone apps." Evans TT.

431. This test suffers from several critical conceptual and methodological flaws and should be disregarded. Lafontaine TT. To begin with, there is no market for smartphone operating systems independent from iOS app distribution. Lafontaine TT. Operating systems only have value to developers insofar as they enable them to transact with consumers. Lafontaine TT. As a result, the salient price to developers is the distribution commission—not the annual developer fee. Lafontaine TT. Thus, the SSNIP should have been based on the commission. Lafontaine TT.

432. In his third test, Dr. Evans claims that, holding the supply of apps constant, a hypothetical monopolist of "iOS app distribution" could profitably impose a SSNIP on consumers (by increasing its commission to developers, who he assumes would then pass on 50 percent of the increase to consumers). Evans TT. He predicts that "Apple could have increased its profits by $887.4 million for FY 2019 by increasing the commission rate" by 31%, which under his assumptions corresponds to a 5% price increase for consumers. Evans TT. Dr. Evans explains that the increased profits "would swamp any lost profits from reduced app spending on switches to Android" and, moreover, that developers would not reduce app supply. Evans TT. As a result, according to Dr. Evans, his conclusion that Apple can profitably raise commissions would hold even after accounting for developers' reactions and for indirect network effects. Evans TT.

433. This "test" suffers from several critical conceptual and methodological flaws and should be disregarded. Lafontaine TT. First, Dr. Evans's model concludes that that Apple has left nearly a billion dollars on the table in 2019 alone—a conclusion that conflicts with a key assumption underlying economic theory that firms maximize profits. Lafontaine TT. More likely is that Dr. Evans's calculation and conclusion are simply incorrect—and that Apple in fact is constrained by existing competition and potential entry in transactions so it cannot profitably raise its commission rate. Lafontaine TT.

434. Next, Dr. Evans focuses entirely on in-app purchases rather than initial downloads—the relevant transaction that he should be testing for in an alleged market for app distribution. Lafontaine TT. Indeed, Dr. Evans's opines that in-app purchases are not even in the relevant app distribution market. Evans TT.

435. Finally, the test is not based on reliable substitution data, but flawed survey data from Professor Rossi. Lafontaine TT. Professor Rossi's survey and the resulting data suffer from several critical flaws. Lafontaine TT. 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. Lafontaine TT. As a result, Dr. Evans's analysis is unreliable and provides no insight into substitution in any alleged iOS app distribution market. Lafontaine TT. Second, Professor Rossi framed his questions in ways that likely biased respondents towards responses that would indicate that they were less likely to substitute or make changes, which in turn, may have biased the SSNIP analysis. Lafontaine TT.

436. In his fourth test, Dr. Evans claims that a hypothetical monopolist of iOS app distribution could profitably impose a SSNIP on developers. Evans TT. This "test" suffers from several critical conceptual and methodological flaws and should be disregarded. Lafontaine TT. Just like the test on the consumer side, this test focuses entirely on in-app purchases instead of initial downloads, and reaches the absurd conclusion that Apple is an actual monopolist, but has failed to choose the profit-maximizing price. Lafontaine TT. In addition, the test fails to consider any potential developer response to a commission increase except exiting iOS altogether. Lafontaine TT. This approach completely ignores other likely responses, such as passing the commissions through to consumers, steering consumers to websites and other platforms, changing the monetization strategy to become more ad-supported or subscription-based, or moving to a web app. Lafontaine TT.

XVII. THE RELEVANT GEOGRAPHIC MARKET IS DOMESTIC

437. When defining a geographic market in a case involving two-sided transaction platforms, the perspectives of both sides of the platform—here, game developers and consumers who play games—are relevant as a matter of economics. Schmalensee TT; Lafontaine TT.

A. From the perspective of U.S. consumers, the relevant geographic market is the United States.

438. Like many game transaction platforms, the App Store operates country-specific storefronts, and consumers transact through a storefront based on their home country. Schiller TT; Schmalnesee TT.

439. Accordingly, U.S. consumers generally have access only to the App Store's U.S. storefront; they do not have access to the App Store's foreign storefronts. Schiller TT. Consoles and other game transaction platforms similarly organize their stores by country, with available content differing by country and payment restrictions in place that prevent shopping in a different country's store. Schmalensee TT.

440. Consumers have limited capabilities to switch to a storefront other than the storefront of their home country. Lafontaine TT.

441. For the App Store, consumers may change country or region through the software on their phones, but the process involves a number of steps and conditions that most consumers would find too inconvenient unless strictly necessary (*e.g.*, if actually moving countries). Lafontaine TT.

442. There are other impediments to switching geographic registration. Doing so often requires a user to violate the terms of service or provide incorrect registration information. Lafontaine TT. Users sometimes must register an account without a credit card; Nintendo, for example, has region-specific eShops that only accept credit cards issued from the same region. Lafontaine TT; Schmalensee TT; DX-4931. And without a credit card on file these consumers would also be unable to download any paid apps or engage in in-app purchases. Lafontaine TT. Different countries also have different local laws in place governing apps; South Korea and China, for instance, have very rigorous licensing and regulatory requirements. DX-4904; Kosmynka TT.

443. In addition, for many platforms, game apps downloaded from a foreign storefront may not work if the user is not in fact a resident of that country. Schmalensee TT. For example, Microsoft notes that "If 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." DX-4920.

444. The typical consumer, therefore, is generally restricted to purchases from platforms that operate in their own country. Lafontaine TT.

B. From the perspective of developers, the U.S. is a separate market for game app transactions.

445. Geographic constraints on U.S. game developers are less pronounced as they can transact with foreign consumers by publishing on foreign platforms. Lafontaine TT; Schmalensee TT. Foreign game app developers also can transact with U.S. consumers by publishing their games on U.S. platforms, including the App Store's U.S. storefront. Lafontaine TT; Schmalensee TT.

446. No matter their country of origin, developers compete for U.S. consumers on platforms' U.S. storefronts because country-specific storefronts for each platform represent different product offerings that do not compete with each other. Lafontaine TT.

C. Competitive conditions differ significantly across countries.

447. The competitive conditions each platform faces varies from country to country. Hitt TT.

448. The set of apps available across the world is not uniform. Hitt TT. 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. Hitt TT.

449. Moreover, different countries feature different slates of competing platforms, with differing relative market shares. Hitt TT. In addition, platforms have penetrated different segments of consumers in different proportions in different countries. Hitt TT.

450. All of the above factors affect demand and substitution, creating different market conditions in each country. Hitt TT.

451. Even Epic does not treat each country alike. To the contrary, Epic has experimented with offering different prices to its customers in different regions of the world—beyond differences dictated by foreign exchange rates. DX-4353 at -494. And when Epic "tinker[ed] with prices in some geos" to "map out the demand curve for V-Bucks in Fortnite," Mr. Sweeney recognized that he needed "a breakdown of engagement for all territories" as data from one or two other countries was not necessarily representative of the U.S. DX-3486 at -414, -417.

XVIII. APPLE LACKS MONOPOLY OR MARKET POWER IN A PROPERLY DEFINED GAME APP TRANSACTION MARKET

452. There is no dispute that Apple did not possess market or monopoly power in any relevant market related to app distribution in 2007, when it released the iPhone and iOS, in 2008, when it created the App Store and established a 30% commission, or in 2009 when it introduced the in-app purchase business model for developers. Hitt TT; Evans TT.

453. Epic appears to contend that Apple obtained monopoly power around 2010. Evans TT. As discussed below, the available evidence is inconsistent with Epic's assertion that Apple has possessed or currently possesses monopoly power in a properly defined market.

A. Apple's effective and actual commission rate on in-app purchases has decreased, not increased, since the App Store was launched.

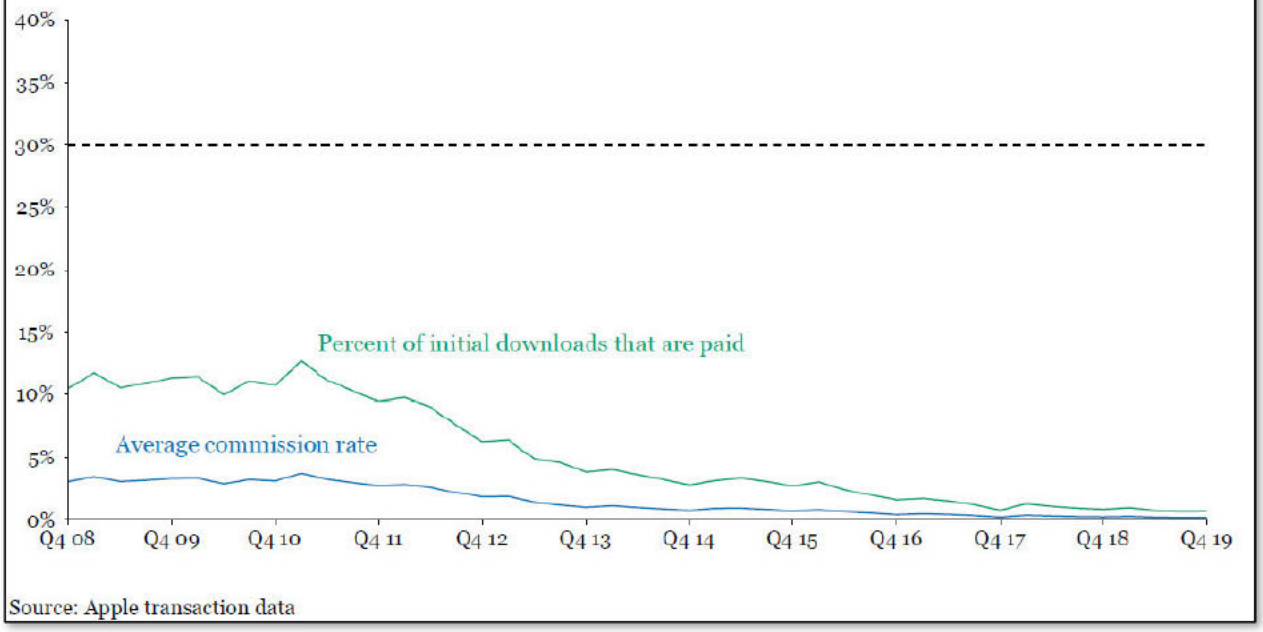
454. Apple has never increased its baseline 30% commission. Schiller TT. To the contrary, it has lowered the commission in multiple instances, including subscription services and as part of its small business program. *See supra* § VII.C; Hitt TT.

455. Apple's effective commission rate has always been lower than the actual rate because the App Store offers free-to-download apps on which Apple collects no commission. Hitt TT.

When those free downloads are considered—as they should be—the effective commission rate for initial game app downloads in 2008 was about 3%. Hitt TT.

456. Since 2008, Apple's actual commission rate has stayed constant or decreased, while the effective commission ratefor initial game downloads has fallen from about 3% to virtually zero today:

EXHIBIT 47
Average commission rate for App Store initial game downloads (July 10, 2008–September 30, 2019)



Source: Apple transaction data

Hitt TT.

457. This decrease is in part attributable to the fact that developers are increasingly taking advantage of monetization strategies that involve payment of no commission to Apple. Hitt TT; Lafontaine TT. Over time, developers have shifted from paid-game downloads to free-to-download games with in-app purchases. Hitt TT. At the same time, an increasing majority of games are free-to-download and offer no in-app purchases—up to 66% in the 2019 fiscal year. Hitt TT.

458. As a result, in real dollars, the average commission on initial downloads is now less than two cents per download. Lafontaine TT. Because this calculation does not include app updates, all of which are free, the average commission across initial downloads and updates is substantially lower than two cents—virtually zero. Lafontaine TT; Hitt TT.

459. Moreover, the increase in the breadth of features available to developers has resulted in an even greater decrease in quality-adjusted prices. Hitt TT; Lafontaine TT. Apple has constantly innovated and improved iOS device technology, such as improvements in processing speed and graphic sensors, meaning that games transacted in the App Store have

increased in quality. Hitt TT; DX-5335. Improvements in the iOS mobile device gaming experience have made it possible for games that formerly were available only on consoles or PCs now to be played on iOS mobile devices. Hitt TT. Thus, developers are getting even more value for their money.

B. Dr. Evans's and Dr. Cragg's effective commission calculations ignore the vast number free transactions, which, when included, yield an effective commission for game app transactions of 8.1% in 2018-2019.

460. Because the App Store is a two-sided transaction platform, a proper market power analysis must account for costs to developers as well as consumers. Schmalensee TT; Hitt TT. One measure of costs to developers is the average effective commission rate of all app transactions. Hitt TT. Any analysis of Apple's effective commission must account for the impact of free downloads that do not incur a commission—something Dr. Evans fails to do. Hitt TT.

461. Free downloads have always been a large proportion of App Store game transactions, and they are only increasing in popularity. Hitt TT. Paid-to-download apps comprised nearly 80% of App Store downloads in 2008 but comprise less than 10% today. Hitt TT. Meanwhile, free-to-download apps (both those that offer in-app purchases and those that do not) have grown from approximately 20% of all downloads in 2008 to over 90% today. Hitt TT. Thus, failure to account for free downloads in the average commission rate would ignore more than 90% of all downloads.

462. Dr. Evans's assumption that the average commission rate is 27.7% fails to consider the impact of free transactions. Dr. Evans calculates the App Store's effective commission rate by dividing net revenues recognized by the App Store by the level of gross billings to users. Evans TT. [redacted] Because he fails to consider free transactions, Dr. Evans's calculation of 27.7% is the effective commission rate of *paid* App Store transactions, Schmalensee TT, not the effective commission rate of *all* App Store transactions, Hitt TT.

463. Dr. Cragg's computation that the average effective commission rate is nearly 33% also fails to consider the impact of free transactions: As Dr. Cragg conceded at his deposition, whether 1% or 99% of transactions were free does not affect the effective commission rate he calculates. Cragg TT.

464. Moreover, Dr. Cragg inflated his effective commission rate by rigging the inputs into his calculations. Hitt TT. In the numerator of his calculation, Dr. Cragg attributed to Apple as part of its "effective commission" the revenue Apple earned from selling sponsored ads. Cragg TT. That is so even though he did not determine what proportion of that revenue came from apps that involve transactions on which Apple collects a commission. Cragg TT. Nor did Dr. Cragg even analyze whether purchases of sponsored ads were transactions within relevant market. Cragg TT. In addition, he failed to add to add to his denominator the revenue earned by developers through advertising. Cragg TT. Thus, Dr. Cragg added the revenue from sponsored ads to his numerator of his calculation without accounting for

all of the revenue these ads generated for developers. Cragg TT. Moreover, Dr. Cragg fails to account for the fact that sponsored ads are optional: Developers can distribute their apps through the App Store without purchasing any ads. Schiller TT.

465. As a result, Dr. Cragg's calculations produce absurd results: He suggests that Apple increased the effective commission rate on initial app downloads from about 27% to over 350% since 2016—a tenfold increase with no clear explanation. Cragg TT.

466. In fact, the average commission rate in 2019 for all app transactions was only 4.7% for all app transactions and 8.1% for game app transactions. Hitt TT.

C. Over the same time, output has dramatically increased.

467. In a two-sided market like the game transaction market, multiple measures of output could be used to calculate market shares. Hitt TT. Since the launch of the App Store, output has increased in many ways (*see supra* § IX):

467.1 The number of app developers has dramatically increased, and today there are over 27 million registered iOS developers. Schiller TT; *see also supra* § IX.A. Specifically, the number and variety of developers signing up for and submitting games to Apple's platform (and other transaction platforms, such as Google Play) has vastly increased. Schiller TT.

467.2 Similar growth has occurred with the App Store's user base—it had over 100 million cumulative users by 2010, DX-4593 at -209, 500 million by 2014, DX-3734 at -145, 650 million by 2015, DX-4526 at -834, and almost 1 billion cumulative users today. Schiller TT.

467.3 The number of game apps available on the App Store has dramatically increased. *See* § IX.B. When the App Store's U.S. storefront launched, it offered 452 third-party apps (131 of which were games). Hitt TT. The App Store offered over 300,000 apps by 2010, DX-4593 at -205, 1 million apps by 2014, DX-3734 at -147, and 1.8 million apps by 2020, Malackowski TT.

467.4 The total number of digital game transactions on the App Store, and the developer revenue earned on the App Store, have dramatically increased over time. *See* § IX.C. [redacted] The App Store's 2,600% increase in total output of digital game transactions is much greater than the digital game transaction market overall, which was around 448% during the same 2018–2018 time period. Hitt TT.

467.5 Sales of iOS devices and other devices on which consumers perform digital game transactions have increased over time. Hitt TT.

467.6 The quality of game apps available on the App Store has increased, *see* § IX.D, allowing iOS devices to run high-end "AAA" games, Hitt TT, games from leaders

in the entertainment industry, DX-4608 at -034, -037, and games that were previously available only on consoles and PCs, Hitt TT.

468. This *increase* in output is important because a firm can be said to have market power if it can profitably *restrict* output. Hitt TT. [redacted]

D. Apple's commission is consistent with that charged by other game app transaction platforms.

469. In the 1990s, most app developers paid 70% or more in commission. Schmalensee TT; Sweeney TT. When Epic agreed to distribute other developers' games around 1996, it collected a 60% commission—which Mr. Sweeney said was a fairly favorable royalty for developers. Sweeney TT.

470. Steam, launched in 2003, was the first online platform focused on game distribution to gain major success. Sweeney TT; DX-4930; Schmalensee TT. It charged only a 30% commission—a commission described as "a breakthrough." DX-4602 at -523.

471. The App Store launched in 2008 and, like Steam, charged a 30% commission. Schiller TT.

472. [redacted] s Mr. Sweeney said, "you see" this commission rate "everywhere." DX-4002 at -517; *see also supra* § XI.A (describing the 30% commission rates charged by other platforms with which Epic transacts). In many instances, the actual commission rate on other platforms besides the App Store is even higher; Roblox, for example, charges a 50% commission for users' purchases of in-game content. Hitt TT.

473. Despite having at most an equivalent commission to its main competitors, the App Store provides significant more services to both developers and consumers. *See supra* § VIII.

474. In addition, Apple has often reduced its commission. *See supra* §§ VII.C & XVIII.A. [redacted] For example, in 2016, Apple reduced its commission rate to 15% for all subscription renewals after the first year. Schiller TT; Rubinfeld TT; Schiller TT. [redacted]

475. Most recently, in March 2021, Google announced that it would reduce commissions for the first $1 million earned by *all* app developers to 15%—similar to Apple's Small Business Program that had been announced earlier and is set to take effect in July 2021. DX-4924.

476. This pattern is contrary to the exercise of market power by Apple and instead indicates that Apple competes on price in a market with at least these other transactions platforms. Hitt TT.

477. Additional price competition is introduced by other developers, on platforms besides the App Store, that negotiate individual commission rates for specific developers beneath their default 30% rate. Hitt TT. [redacted]

478. In addition, the incidence and availability of free games (and free-to-play) games has increased dramatically since Apple launched the App Store. Hitt TT. The stated commission rates of app stores, discussed above, therefore overstate the effective commission rate because these platforms offer free-to-download games that do not incur commissions. Hitt TT.

E. Epic's attempts to calculate an artificial profit margin for the App Store is flawed.

479. Apple's financial performance is reported publicly in audited financial statements filed on a periodic basis with the Securities and Exchange Commission. *See* Rollins depo. at 172:20–24 (discussing Apple's publicly filed SEC Form 10-K). As permitted by the accounting rules, Apple does not separately report business units; rather, it reports company-wide figures. Cook TT.

479.1 In 2020, Apple reported profits of over $57 billion. DX-5319. This represented a 20.9% profit margin. *Id.* As Apple explained in its most recent Form 10-K, despite its considerable profit, it is subject to competition in all of its lines of business. DX-4581. In any given quarter or year it may make more on some and less on others but it is an integrated whole and reports its financials that way. Cook TT.

479.2 Epic makes no arguments based on Apple's reported (GAAP/GAAS) financial statements, thus implicitly conceding that the reported figures do not support any claim of supracompetitive profits. Instead, Epic and its expert Ned Barnes focus on the profit margin allegedly attributable to the App Store segregated from the rest of Apple. Barnes TT. Apple, however, does not account for the App Store as a separate business unit in its audited financial statements. Schiller TT; Barnes TT.

479.3 Mr. Barnes's margin analysis relies on Apple's internal analyses of App Store "profitability" for various purposes. Barnes TT. Apple does not dispute that these documents were prepared by its employees, but they do not accurately reflect the profitability of the App Store for at least two reasons. First, one of the documents on which Mr. Barnes relies uses a revenue-based allocation of joint costs, which ignores the fact that the App Store's share of Apple's revenue may be a very poor indicator of the extent to which it benefits from various joint costs, such as research and development or marketing. Schmalensee TT. Second, Mr. Barnes attempts to correct for the missing costs and expenses uses a single line item from a Services line of business report and again uses a revenue-based allocation, but that continues

to fail to account for the likelihood that different costs and expenses affect Apple's various lines of business differently. Schmalensee TT. Furthermore, Mr. Barnes' use of a single line item makes it impossible for even Mr. Barnes to specify what costs and expenses are included or excluded in his calculation. Schmalensee TT.

480. There is no reliable way to identify all costs associated with running the App Store. But it is clear that the App Store P&L estimates only cover a fraction of the costs associated with running the App Store, particularly since there are substantial joint costs between Apple's hardware and software businesses. Schmid TT.

480.1 Apple is structured as a functional unit, not as separate business units. As a result of Apple's general philosophy that its products and services are part of an ecosystem, Apple views the value of all of its products and services as a whole. Thus, Apple's business is not structured that way that allows a person to push a button and obtain an App Store P&L. Cook TT.

480.2 Apple's "P&L does not include all expenses associated with the [A]pp [S]tore" and is "missing direct costs that are associated with the [A]pp [S]tore." Rollins depo. at 59:7–16. Examples of costs associated with the App Store include engineering costs for iOS and the related SDKs, Schiller TT, and WWDC and developer outreach, Rollins depo. at 136:4–14. These costs have amounted to "many billions of dollars." Schiller TT; *see also* Malackowski TT.

481. How to evaluate the cost of reviewing apps is "an extremely complicated question because there's so many different aspects of it." Pruden depo. at 53:11–13. As Tim Cook testified, Apple does not do P&L's at an earnings level for anything other than for the total company. Cook TT. So did Philip Schiller: "And we think of Apple as one P&L for the whole company. I haven't seen an App Store cost model, and I don't recall anything like that." Schiller TT.

482. Most of the App Store's major competitor platforms also generally charge a 30% commission, *see supra* § XVIII.D, so even if Apple did have higher margins than its competitors, those margins could not be the result of the App Store's commission.

483. Epic is similar in that it does not maintain P&Ls for specific business units. Sweeney TT; Babcock depo. at 141:2–19. Epic does not have a systematic effort to attribute the various costs of the Epic teams working on shared technology and services to particular projects. Sweeney TT. Mr. Sweeney believes that doing so would be artificial and arbitrary. Sweeney TT.

F. Apple's profit margins are not evidence of market power.

484. The fact that a firm has high profits does not necessarily mean that it has market power. Lafontaine TT. There are many different reasons for changes in profits or intensity of competition. Lafontaine TT. For example, if multiple firms exist in a community with a decreasing population, some firms may exit the market for lack of demand—but that does not mean the remaining firm is exercising market power. Lafontaine TT.

485. When evaluating market power, profitability is one consideration among many. Lafontaine TT. Economists generally consider two broad categories of evidence, both of which look beyond profitability: (i) "market conditions" or "market structure" and (ii) "market outcomes" such as price, quantity, and quality. Lafontaine TT.

485.1 Evidence of market structure can help establish that an unconcentrated market with many small competitors is likely to be competitive, but the inverse is not always true—a concentrated market does not always imply the existence of market power. Lafontaine TT.

485.2 Market outcomes have their own nuances. Market outcome measures, particularly profit, can be difficult to measure appropriately because price can be measured in so many ways. Lafontaine TT. The appropriate measure (or measures) of price depend on the circumstances. Lafontaine TT. Further, consumers care about quality-adjusted price, not just about absolute price. Lafontaine TT. Even when price is correctly analyzed, it often must be considered alongside other factors, such as output. Lafontaine TT. If a firm increases the quality of its product, for example, a corresponding increase in price is not necessarily anticompetitive. Lafontaine TT. For a two-sided transaction platform with a complex pricing structure, a single unambiguously best summary measure of price may not exist. Schmalensee TT. Finally, the presence of network effects may constrain even a firm with market power from charging supracompetitive prices because of its effect on the other side of the platform. Schmalensee TT.

486. Both categories of evidence—market structure and market outcomes—are inconsistent with Apple possessing monopoly power or charging supracompetitive prices. Regarding market structure, as discussed more fully below, Apple has a low share of a properly defined market. Hitt TT; *see infra* § XVIII.G–H. And as described above, market outcomes demonstrate that Apple does not exercise market power because output and quality have increased while price has decreased. *See supra* § XVII.A–C.

487. Dr. Evans' analysis of Apple's profit vis-à-vis market power is erroneous. His suggestion that the App Store's commission is supracompetitive is inconsistent with his claim that Apple charges *less* than the profit-maximizing commission rate. Lafontaine TT; Schmalensee TT. And Dr. Evans's suggestion that Apple earns an unusually high profit margin on the App Store as a type of direct evidence of monopoly power is wrong for at least three reasons.

488. First, in differentiated product industries such as this one, price premiums well above marginal costs are to be expected and are not, on their own, evidence of supracompetitive pricing. Lafontaine TT. Most markets involve differentiated products, and entertainment products are classic examples of differentiated products. Lafontaine TT. Operating systems for other devices are differentiated from iOS, *i.e.*, they may not be perfect substitutes for iOS. Hitt TT. But that is irrelevant identifying the relevant substitutes for this case: digital game transactions for developers and consumers. Hitt TT. The fact that products are not identical does not imply a lack of competition. Hitt TT. For example, as Apple competes for games transactions with other transaction platforms, including those

that facilitate only game transactions, it faces competitive constraints in its pricing for game transactions from a variety of sources, not all of which offer every service or feature that an iOS device offers. Hitt TT.

489. Second, economists generally do not consider accounting profits to be an accurate measure of economic profits, especially for firms like Apple that invest substantially in intellectual property. Lafontaine TT.

490. Third, Dr. Evans improperly inflates the App Store's margins by failing to allocate to the App Store any of the broader Apple ecosystem costs that contribute to the success of the App Store. Lafontaine TT.

491. Even when using the accounting profits that do not fully account for joint costs, however, Apple's 2019 profit on the interlinked business lines of the iPhone, iPad, and App Store was just 27%. Evans TT; DX-3911. In comparison to other large platform businesses, this figure is not outside the norm. Lafontaine TT.

492. Indeed, neither Apple's nor the App Store's margins are indicative of market power when compared to Epic. *Fortnite*'s gross profit margin was over 86% in the third quarter of 2017, DX-3657, and was over 68% in the first quarter of 2018, DX-3901. In 2019, Epic earned $1.83 billion in gross profits, resulting in an overall gross profit margin of 43%. DX-3467 at -129. Epic projected $3.85 billion in total revenue and a gross profit margin of 40% for 2020. DX-4376 at -396–97.

G. Apple's market share belies market power.

493. Apple has a low share of a properly defined relevant antitrust market, *i.e.*, the game app transactions market.

493.1 There are multiple measures of output that can be used to measure market shares in a two-sided transaction markets like the digital game transactions market, including by (i) the number of game transactions that treats each transaction equally, regardless of the consume price or value of the app or in-app purchase, or (ii) the dollar value of game transactions facilitated. Hitt TT; Schmalensee TT. Dollar value is the better measure because developers can sell in-app currencies (such as V-bucks) at different price increments, and there does not appear to be market-wide measures of the number of game transactions. Hitt TT.

493.2 Measured in dollar value of game transactions facilitated, Apple's share of the game app transactions market is between 23.3–37.5%. Hitt TT. It is difficult to pinpoint an exact percentage of market share due to complications in data reporting, including that (i) there is no single source for the total revenue of the digital game transactions market or its individual components, and (ii) industry sources vary in terms of what types of transactions they include in their revenue estimates and how revenues are categorized. Hitt TT. Market share measurements are also complicated by the various types of revenue that could be included in the analysis, such as digital transactions, subscriptions, and boxed games. Hitt TT. The range of 23.3–37.5% accounts for these variables. Hitt TT. But the most appropriate

estimate is likely on the lower side of this range, which encompasses a market with single-sided platforms—distribution methods that Epic's chief economic expert, Dr. Evans, agrees would compete with two-sided transaction platforms like the App Store. Evans TT; Hitt TT; *see also* DX-4178 at -988 (internal analysis calculating a 27% worldwide market share in 2017 for the App Store).

493.3 Even at a conservative estimate, Apple's competitors in the game app transactions market comprise over 60% of the market. Hitt TT. Several such competitors, such as Google Play and Samsung Galaxy Store, launched after the App Store, which is consistent with low barriers to entry in this market. Hitt TT; Lafontaine TT.

493.4 Epic's data is consistent with Apple's limited market share in the game app transaction market. Between April 2018, when *Fortnite* launched on iOS and August 13, 2020, when the hotfix was triggered, the total average daily players on iOS made up less than 10% of *Fortnite*'s total average daily players. Sweeney TT. During that same time period, transactions on iOS accounted for 10% or less of Epic's revenue. Sweeney TT.

494. Apple's limited market share is consistent with the entry of new participants in the game app transactions market.

494.1 After the App Store launched, many competing transaction platforms and other competing services have entered the marketplace, including Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, online game streaming services, and, of course, EGS. Schmalensee TT; Schiller TT; Cook TT.

494.2 [redacted] These new competitors demonstrate that alleged barriers to entry are not sufficient to restrict entry. As a result, actual and potential entry imposes constraints on Apple's market power." Lafontaine TT.

495. Apple's market share is also consistent with its decision to permit cross-platform play. *See supra* § VII.C.

495.1 Apple's cross-platform policy allows users to download and pay for an app on another platform and then download the same app on the App Store without paying a second time. Schiller TT.

495.2 Apple's cross-platform policies have contributed to *Fortnite*'s success as a cross-platform game. As Mr. Sweeney recognized, Apple has never had any policy prohibiting cross-platform play, Sweeney TT, and permits V-Bucks purchased anywhere to be used in Fortnite on iOS so long as Epic also makes those V-Bucks available for purchase on iOS. Sweeney TT. Apple does not take any commission

or earn any money for V-Bucks purchased on another platform. Sweeney TT. Many iOS *Fortnite* players take advantage of the ability to use V-Bucks consistently across platforms. About one-third of iOS players who have purchased V-Bucks on iOS have also purchased V-Bucks on other platforms. Hitt TT.

495.3 In contrast, Epic had to negotiate with Sony and Microsoft to get those companies to permit cross-platform *Fortnite* play on their platforms. *See supra* § XI.B; Sweeney TT.

H. The relevant game app transaction market is not highly concentrated.

496. The App Store has many competitors, including other game transaction platforms—for mobile, PC, and console—as well as direct distribution sales made by other developers or publishers and game streaming services. *See supra* § X; Cook TT; Schiller TT.

497. Because data on the number of game transactions is not readily available, the dollar value of game transactions facilitated is the most appropriate measure for estimating market share. Schmalensee TT. This requires determining two measures: (1) total revenue for digital game transactions on the App Store in the U.S., and (2) total revenue for digital game transactions across all digital game transaction platforms in the U.S. Hitt TT.

498. [redacted]

499. [redacted]

500. Apple's market share based on total revenue from game transactions is therefore between 23.3% and 37.%. Hitt TT. This market share is inconsistent with Apple's ability to exercise market power. Hitt TT. Indeed, this lack of concentration in the market suggests Apple does not possess monopoly power. Lafontaine TT.

I. Existing transaction platform rivals have the ability to expand output.

501. There are no constraints on the ability of of other digital game transaction platforms to expand output. Hitt TT.

502. [redacted]

503. Apple's App Store Guidelines explicitly permit game streaming on the iOS platform through an internet browser, a Web app, or a remote desktop. DX-5308 at -353–354.

503.1 [redacted]

[redacted]

503.2 [redacted]

503.3 [redacted]

503.4 [redacted]. The constraint is particularly powerful because switching costs have reduced over time and are not very high, potentially zero. Schiller TT.

503.5 [redacted]

504. The entry of these competing platforms or streaming services indicates Apple lacked the market or monopoly power to exclude competition. Schmalensee TT.

505. [redacted]

506. [redacted]

J. Apple is constrained by indirect network effects, which limit a platform's ability to raise overall prices.

507. The App Store is a two-sided transactions platform that exhibits strong indirect network effects between consumers seeking high-quality apps and developers seeking access to

Apple's large customer base as well as interconnected pricing and demand. *See* § XII; Schmalensee TT.

508. These strong indirect network effects constrain Apple's ability to raise prices because even small price increases may not be profitable where indirect network effects are strong. Schmalensee TT. If Apple were to raise commission rates charged to developers, the reduction in developers transacting through the App Store would also lead to a reduction in consumers transacting through the App Store due to indirect network effects. Hitt TT. This can lead to a downward spiral. Schmalensee TT.

509. The risk of developers leaving the App Store is significant, particularly with respect to game developers that have the ability to operate on multiple transaction platforms. In this very case, Epic took actions it knew would likely lead to its removal from the App Store. Sweeney TT; *see also supra* § X.

510. More broadly, 79% of large developers—and majorities of medium and small developers—also already develop for other platforms. DX-4224 at -934. And a 2019 survey indicated that while 60% of developers supported iOS, only 50% considered it very important to their future growth—fewer than the proportion that saw console platforms as very important to their futures. DX-4926 at 24.

511. Indeed, Apple has *reduced* its commission at various times rather than lose out on categories of developers, which would reduce the overall attractiveness of the App Store to consumers. *See supra* § VII.C; Hitt TT. Apple's reader rule—discussed above—is just one example. *See supra* § VII.C; Hitt TT.

K. Apple is constrained by alternative options for monetization.

512. Developers need not even leave the App Store to constrain Apple's ability to raise prices. Hitt TT. If Apple sought to raise its commission, for example, developers could monetize through content or digital currencies sold to consumers through another transaction platform or directly through a web browser (including a web browser on an iOS device). Hitt TT. Developers also could use subscriptions that consumers could use within an iOS app but are sold through another transaction platform or directly through the web browser (including a web browser on a iOS device). Hitt TT. Developers also could shift to a model that used in-app advertising or a model that monetizes through in-app promotions and events. Hitt TT.

513. As discussed in § VII.C, Apple's multi-platform rule permits game app developers to sell content outside of the iOS app (e.g., selling content directly from websites) that users can then access in the iOS app. Developers could also offer alternative packages and further discounts that are not available on iOS, or through traditional retail channels. Hitt TT; Lafontaine TT.

514. Cross-platform play allows Epic to sell V-Buck transactions outside the App Store that can be used in the iOS version of the game, including through the iPhone's browser. Hitt TT. V-Bucks can also be sold in physical stores. Schmid TT. And many *Fortnite* players on iOS devices in fact make purchases, including purchases of V-bucks, on alternative game

transaction platforms. Hitt TT. Indeed, 65.4% of iOS *Fortnite* players who made purchases did so *exclusively* on other platforms. Hitt TT. Thus, Epic is able to monetize *Fortnite* on iOS devices without paying a commission to Apple. Hitt TT.

515. [redacted]

516. [redacted]

L. Developers' countervailing power, including Epic's leverage over platforms, constrains Apple.

517. Because developers have many options for distribution and monetization, they exercise significant power over platforms. As Mr. Sweeney summarized, "developers have the real power in the industry" because "where developers go customers will go with them." DX-3199 at -542.

517.1 Epic proves the point. As Epic has stated, Apple was always the "lowest or second lowest" revenue-generating platform for *Fortnite*. Babcock depo. at 173:12–16.. Epic realized "that there's a better than 50% chance Apple and Google will immediately remove the games from their stores the minute we do this." DX-4419 at -233.

517.2 Prior to *Fortnite*'s removal from the App Store, Epic negotiated greater levels of support and expedited updates from Apple. Hitt TT; Grimm P.I. decl. ¶¶ 5–7. And *Fortnite*'s revenues and play time actually increased year-over-year after *Fortnite* was removed from the App Store and Google Play Store. Weissinger TT.

518. Apple is further constrained by consumers' ability to switch platforms and related indirect network effects. Hitt TT.

518.1 Consumers can—and do—switch transaction platforms. *See* § XVI. Consumers own multiple devices and have access to multiple games platforms that are reasonably interchangeable for the purpose of game transactions. *See id.* Consumer behavior shows that they access *Fortnite* on various devices and platforms. *See id.*; Hitt TT.

518.2 Epic recognizes consumers' ability to switch platforms. [redacted] More recently, Epic's "Free *Fortnite*" campaign following the removal of *Fortnite* from the App Store demonstrates that its users could (and Epic knew they could) substitute between platforms. Hitt TT.

518.3 Behavior of *Fortnite* users on iOS after *Fortnite*'s removal from the App Store confirms that consumers can and do switch operating platforms. "[V]irtually all Fortnite users on iOS regularly use other devices that could be used to play Fortnite and conduct in-game purchases." Hitt TT. [redacted]

XIX. THE CONDUCT CHALLENGED BY EPIC IS NOT ANTICOMPETITIVE

A. The "technical restrictions" that Epic complains about are genuine product improvements.

519. Epic claims that Apple's anticompetitive conduct includes designing technical restrictions into iOS that prevent users from downloading app stores or apps directly from websites. Dkt. 1 ¶ 65. But those restrictions, including the prevention of sideloading, were conscious, reasonable decisions that facilitated Apple's creation of a new product and service: iOS and the App Store. Rubin TT.

520. Epic's allegations center on the App Store restrictions, not on the technology design of the iPhone itself, which was released a year prior to the App Store. Evans TT.

521. iOS is a novel and proprietary operating system, protected by Apple's intellectual property and developed at extraordinary cost by Apple. Malackowski TT; Schiller TT. The development of iOS was informed by decades of experience with macOS in the desktop and laptop environment. *See supra* § IV.B. Apple sought to leverage that experience, improve upon macOS, and adapt the new operating system to the unique features of mobile devices. *See supra* § IV.B.

522. iOS contains many features that improved security, reliability and stability for software. *See* § IV.B. iOS provides layers of protection to protect user data, including app code signing, sandboxing, entitlements, and reservation of private APIs. *See* § IV.B; Rubin TT.

523. Apple also designed certain restrictions on the addition and removal of apps. For example, most (but not all) pre-installed apps can be removed. Rubin TT. In addition, Apple designed iOS so as not to facilitate sideloading of third-party applications. Rubin TT; Schmalensee TT. These technical improvements were intended to protect the integrity,

reliability, security, and functionality of the phone, among other things. Federighi TT; Schiller TT; Forstall depo. at 66:4-10; 143:4-12; 145:3-8. And Apple's decision to implement them was reasonable. Rubin TT.

524. The App Store also was a novel innovation that improved upon preexisting software distribution methods. As discussed above, the App Store was a dramatic departure from the cumbersome and expensive mobile app distribution process that preceded it. *See supra* §VII. And with Apple's continued innovation since, including the introduction of IAP and the continual development of SDKs, APIs, hardware improvements, and the like, Apple has dramatically improved the platform. *See supra* §§ III; VIII. By both quantitative and qualitative measures, this has been a tremendous boon for both consumers and developers. *See supra* §§ VIII, XVIII.A, XVIII.C.

525. Lifting the challenged technical restrictions—particularly the prohibition on sideloading—would greatly undermine these improvements. Sideloading introduces security risks to users, Rubin TT, allows installation of unreviewed apps that might install malware or otherwise might grant themselves entitlements to a broad array of hardware and software in order to, for example, access privileged functionality without alerting the user, Rubin TT, makes it difficult to keep sideloaded apps up-to-date and secure, Rubin TT, and allows digital piracy and other potential intellectual property violations, Rubin TT. Each of these risks counteracts the improvements in security and privacy that Apple consistently has made over time.

B. The "contractual restrictions" challenged by Epic do not constitute anticompetitive conduct.

526. The contractual restrictions challenged by Epic include: (1) Section 3.2(g) of the DPLA, which requires that developers distribute native iOS developed using Apple's IP apps through the App Store; (2) Section 3.3.2(b) of the DPLA, which prohibits apps that create a store or storefront for other code or applications; and (3) the App Store Review Guidelines, which the DPLA requires iOS developers to adhere and which do not permit the creation of an interface for displaying third-party apps, extensions, or plug-ins similar to the App Store. Dkt. 1 ¶¶ 68–69, 71–72, 77, 79–80.

527. First, the contract terms Epic challenges are an integral part of a procompetitive intellectual property licensing arrangement. Rubinfeld TT.

527.1 The rights licensed by the DPLA are Apple's intellectual property—including copyrights, patents, trade secrets, and trademarks—and have value to Epic and developers in general. *See supra* § V; Malackowski TT. As Mr. Malackowski explained, Epic has no right to use Apple's proprietary software, tools, or services without being granted those rights pursuant to a license agreement. Malackowski TT. Epic's employees agree. Penwarden depo. at 46:15–47:11; DX-3669 at 6–7.

527.2 The DPLA is a procompetitive license. Rubinfeld TT. By allowing developers to integrate Apple's IP with their own innovations, they have created over a million new applications. Hitt TT. Because of Apple's IP licenses, today, users can access

over 1.8 million apps, around 84 percent of which are entirely free. Schiller TT; Hitt TT. In return, the licensing agreement allows innovators to receive returns on their investments. Malackowski TT.

527.3 The distribution terms that Epic challenges serve the valid procompetitive purposes of the DPLA licensing arrangement. Preventing developers from using Apple's IP to distribute outside the App Store is a legitimate mechanism to reinforce Apple's technical restrictions, protecting consumers and devices, and prevent free-riding and avoidance of Apple's commission. Rubinfeld TT; Malackowski TT. Free-riding would exploit not only Apple's historical innovations and investments but also Apple's willingness to continue to make such innovations and investments in the future. Rubinfeld TT.

528. Second, there is no exclusivity requirement in the Developer Agreement or DPLA that would support Epic's claim that Apple has engaged in anticompetitive conduct.

528.1 There is no restraint on developers' ability to develop software for other platforms. Developers may develop and distribute apps—even substantively identical apps—through other platforms. Hitt TT. Epic's business model is a clear illustration of multi-channel game distribution. Hitt TT.

528.2 The DPLA's reasonable restrictions on the use of Apple's valuable intellectual property are clearly spelled out to developers. Rubinfeld TT; Malackowski TT. For example, "In order to use the Apple Software and Services, You must first accept this Agreement. If You do not or cannot accept this Agreement, You are not permitted to use the Apple Software or Services. Do not download or use the Apple Software or Services in that case." DX-3900 at -264. The DPLA explains to developers that "Applications developed under this Agreement for iOS Products, Apple Watch, or Apple TV can be distributed in four ways: (1) through the App Store, if selected by Apple, (2) through the Custom App Distribution, if selected by Apple, (3) on a limited basis for use on Registered Devices (as defined below), and (4) for beta testing through TestFlight." *Id.*

529. Moreover, there are ways to distribute apps for iOS devices without signing the DPLA or abiding by the App Review Guidelines. Schiller TT.

529.1 As an initial matter, the DPLA applies only to apps "developed using the Apple Software." DX-3900 at -278 (Section 3.2(g)).

529.2 As Apple's agreements recognize, "there is always the open Internet." DX-3691 at -084. Developers therefore may create web applications that are written using standard web technologies such as HTML, CSS, and JavaScript. Schiller TT; Rubin TT. These applications can be accessed on an iPhone using a mobile browser—how third-party developers were initially able to distribute apps. Rubin TT; *see also supra* § III.B. Indeed, Apple is committed to providing "a great web experience too," through iOS web browsers, for apps "[i]f the App Store model and guidelines are not best for your app or business idea." DX __ 3695 at -084.

529.3 And game streaming apps have presented yet another new avenue for app distribution. Cook TT; Schmalensee TT. [redacted]

C. Like Apple, other games transaction platforms, including Nintendo, Sony, and Microsoft, have "walled gardens."

530. Apple has always used a "walled garden" approach to the App Store. *See supra* §§ III, IV, VI. The walled garden is a valid business strategy, widely employed among game app transactions platforms, that benefits app developers and consumers. Rubinfeld TT.

531. There is no dispute that quality, integrity, and security are important to the success of a transaction platform. When Epic "sell[s] a product to customers, [it too] feel[s] [it] ha[s] a responsibility to moderate for a reasonable level of quality, and also a reasonable level of decency." DX-3199 at -543.

532. A walled garden allows Apple to maintain the integrity and security of iOS devices. Cook TT; Schiller TT. "The tight integration of hardware and software on iOS devices ensures that each component of the system is trusted, and validates the system as a whole. From initial boot-up to iOS software updates to third-party apps, each step is analyzed and vetted to help ensure that the hardware and software are performing optimally together and using resources properly." DX-3561 at -312. Indeed, the integration of hardware and software and the services element are key to the customer experience. Cook TT; Schiller TT.

533. Part and parcel of Apple's walled garden approach is its robust app review process.

533.1 Apple reviews each and every app to ensure that they operate as described and don't contain obvious bugs or other problems. *See* § VI.D. Apple also reviews entitlements requested by apps to determine whether they are reasonable and appropriate for the stated purpose of such apps. Kosmynka TT. Such review, particularly human review used by Apple, is an important mechanism for improving and maintaining reliability and safety. Apple's App Store review process benefits from over a decade of improvements and innovations in response to the discovery and evolution of new safety threats. Rubin TT.

533.2 Drs. Mickens and Lee cherry-pick data to distort the efficacy of Apple's App Review. For example, Dr. Lee focuses on roughly 20 malicious apps that made it through app review without acknowledging that Apple reviews more than five million apps and app updates a year and that the approximate 20 apps constituted 0.0004% of the apps and app updates reviewed that year. Rubin TT.

533.3 Users value Apple devices because everything "just works." Cook TT. For example, a September 2020 survey reveals that consumer ratings of the App Store are much higher than of Google Play. On "can deliver the best experience," the App Store leads 79% to 57%. On "brand I can trust completely," the App Store leads 76% to 59%. And on "I love this service," The App Store leads 76% to 48%. DX-3447 at -333. Developers have recognized the benefits of Apple's review

process in creating a healthy ecosystem with a high degree of consumer confidence in the offerings on the App Store. DX-3944 ("Ode to the App Review Team").

13 Drs. Lee and Mickens' expert reports do not dispute that curation provides additional layers through which security and privacy can be protected. Rubin TT.

533.4 If Apple approves and distributes low-quality apps, it will suffer a loss of goodwill—detracting from its attractiveness to consumers and, by virtue of indirect network effects, developers too. Shoemaker depo. at 109:1–10:7; Rubin TT.

533.5 The success of the app review process has led other transaction platforms to adopt Apple's practices and increase the robustness of their review processes. DX-3393 at -468 ("The App Store is better for so many reasons, but Google is clearly seeing the fact that people trust our store more. And when you trust a store, you're more likely to spend money there. If Google really starts reviewing apps, there's a likelihood that people will start trusting that store."). Epic, for example, involves humans in its app reviews. Sweeney TT.

534. Many other game transaction platforms also have walled gardens or are otherwise heavily restricted.

534.1 Sony, Nintendo and Microsoft all operate similar walled gardens or closed platform models as Apple, whereby the hardware, operating system, digital marketplace, and payment systems are integrated and exclusive to the platform owner. Sweeney TT.

534.2 Samsung, Microsoft, and Google Play all have application review processes and moderate the app content. DX-4923; DX-4929; DX-4915; Kreiner depo. at 60:18–61:11; 83:17–84:7; 91:8–19.

534.3 Several other platforms also prohibit competing stores-within-stores. The Epic Game Store also has no competitive stores within it. Sweeney TT. Google Play, Steam, and Samsung also prohibit apps from having a-store-within-a-store. Google asserts very clearly that it is a closed platform, and that the Google Play store is to be the sole means through which Google Play developers can sell their games, virtual goods, or services. DX-3298 at 3-4. [redacted] Even today, "third-party app stores are still rife with Trojanized applications." DX-4975 at 7.

534.4 [redacted]

535. [redacted]

536. Security lapses on other platforms underscore the benefits of Apple's approach. For example, in 2017, Epic employees discussed account breaches and stated that additional manual review measures would be too time- and labor-intensive. DX-3252 at -646–47. [redacted]

D. Apple has not refused to deal with Epic.

537. Dr. Evans asserts that Apple conditionally refused to deal with Epic by requiring Epic to use the App Store exclusively if it wanted to distribute its apps on the App Store at all. Evans TT. But Apple has no duty to deal with Epic at all, and certainly has no duty to deal with Epic on its preferred terms.

538. Contrary to Epic's claims, Apple was clear that it would resume business with Epic if Epic agreed to comply with the terms of the DPLA and the App Guidelines that apply to all developers seeking to use Apple's intellectual property to create and distribute iOS apps. *See supra* § XI.N.

539. Apple has never licensed any developer to use Apple's intellectual property in order to develop a competing technology for iOS app distribution. Schiller TT.

540. As Dr. Evans concedes, Apple also has not sacrificed short term benefits in order to obtain higher profits in the long run from the exclusion of competition. Evans TT. Rather, Apple had rational—and procompetitive—reasons to refuse to permit *Fortnite*'s distribution on the App Store in a manner that flagrantly violated the terms of the licensing agreement and the App Review Guidelines.

540.1 Apple terminated Epic's Developer Agreement and DPLA only after Epic flagrantly breached the parties' contractual agreements. *See* DX-3078; *see also supra* §§ XI.K–XI.N.

E. Epic has abandoned its essential facility claim, which is factually unsupported in any event.

541. First, Epic has not alleged or demonstrated that it is a competitor of Apple's in the field of the facility itself—"iOS"—or in a vertically related market that is controlled by the facility. Dkt. 1 ¶ 197. Epic does not compete with Apple because it does not offer a mobile operating system. *See supra* § XI.A (describing Epic's business model).

542. Second, iOS is not essential to Epic's survival and is relatively insignificant to Epic's ability to reach consumers.

542.1 As described above, *Fortnite* and Epic's other offerings were available through a number of game apps transaction platforms. *Fortnite* was available through other game app transaction platforms before Epic started distributing it on the App Store, Hitt TT, and it continues to be available on other platforms even after being pulled from the App Store, Sweeney TT. *Fortnite* will soon be available to iOS users though Nvidia GeForce Now, which was recently being tested and is expected to launch imminently. Sweeney TT. And consumers can continue to make Fortnite transactions through the iPhone browser. *See supra* § XIV.A.

542.2 Most consumers can make *Fortnite* transactions on a non-iOS device. Hitt TT. Epic's "Free *Fortnite*" demonstrates that *Fortnite* users can and do switch platforms—Epic retained over 80% of iOS *Fortnite* users' pre-hotfix revenue (across all platforms) in the four-month post-Hotfix period. Hitt TT.

542.3 The vast majority of *Fortnite* revenue comes from sources other than iOS. *See supra* § XIV.B.

543. Indeed, Epic's economists, Dr. Evans, has declined to express any opinion related to an essential facilities claim. Evans TT.

544. The evidence described above with respect to Epic's refusal to deal allegations demonstrates that Apple has not refused to provide Epic with access to the claimed essential facility. *See supra* § XIX.D.

XX. APPLE'S CONDUCT DID NOT HAVE AN ANTICOMPETITIVE EFFECT

A. The opening of the iPhone platform to third-party developers was procompetitive.

545. With the introduction of the iPhone, Apple offered consumers a revolutionary new device with a new operating system—premised on security, reliability, and privacy. *See supra* §§ III–IV. Consistent with those principles, the iPhone's operating system, iOS, did not permit sideloading, which Apple determined created unacceptable vulnerabilities on the iPhone. *See supra* § III.B. But users could access native apps developed by Apple as well as web applications (through a web browser, like Safari). *See supra* § III.B.

546. Apple's original view was that it would not allow third-party apps to be downloaded onto the iPhone. *See supra* § III.B. With the introduction of the App Store, however, Apple created an entirely new transactional platform—a new option for digital game transactions. Schiller TT; Schmalensee TT; *see supra* §§ III.A & III.C.

547. Licensing substantial amounts of intellectual property, Apple created a new platform that developers could use to create game apps for consumers. *See supra* § III. Likewise, the App Store created a new, easy-to-use platform that iOS users could use to download games—often for free. *See supra* §§ III & VII.C.

548. Critically, the App Store's introduction did not eliminate or restrict any then-existing distribution channels. *See supra* § VI. Developers who did not wish to abide by Apple's terms were free to continue making web apps or connecting with consumers through other

platforms, as they had been permitted to do before the App Store. Rubin TT. As Steve Jobs emphasized at the launch of the iOS SDK: "Web applications are still fully supported, so any Web application can continue to be built, which we are improving upon as well." DX-3177 at -081. The App Store was a new platform whose introduction only expanded choice for developers and consumers. Schiller TT; *see also supra* § IX.

B. The success of the App Store business model has benefitted consumers.

549. The App Store provides an easy, seamless process for consumers to find and download apps. Schmalensee TT; *see also supra* § VII.B.

550. In doing so, the App Store also provides consumers with free access to a huge library of safe, secure apps—including thousands of game apps—that enhance their lives. Schmalensee TT; Schiller TT. From the start, many of these game apps were free. Schiller TT; *see also supra* § III.E.

551. The App Store's pricing structures have continued to encourage free apps. Schmalensee TT. Accordingly, the number of free apps that consumers can download from the App Store has significantly increased over time. Hitt TT. Today, 83% of apps with at least one download on the App Store are free to consumers, including 76% of game apps. Hitt TT.

552. In particular, the availability of these free apps provides enormous benefits to consumers. Schmalensee TT. Most obviously, consumers are able to access and choose between a broad variety of apps—from games to health to business productivity—at no cost. Schmalensee TT. Even among game apps, they are able to choose among a variety of options in each game genre. Schmalensee TT; Hitt TT.

553. Whether or not they cost consumers anything, all apps on the App Store have benefitted from Apple's vigorous review process and high security and privacy standards. Schmalensee TT. This not only ensures iOS users enjoy industry-leading security and privacy protections but also allows customers to trust that apps on the App Store meet these standards—relieving them of the burden of tracking down technical information on each app. Schmalensee TT. Similarly, Apple curates and ranks game apps, making it easier for consumers to find interesting content. Schmalensee TT.

554. Consumers also benefit from indirect network effects fostered by Apple. Schmalensee TT. By providing developers with an array of powerful tools to create high-quality apps for a nominal cost, Apple has increased the number and quality of apps available to consumers—including free apps. Schmalensee TT. This in turn creates a virtuous cycle of attracting more users and, in turn, more and better developers. Schmalensee TT.

C. The success of the App Store business model has benefitted developers.

555. The App Store has also created tremendous opportunities for developers. Schiller TT; Schmalensee TT.

556. First, the App Store's appeal to consumers has created an enormous audience of potential customers for developers. Schmalensee TT.

557. Apple attracts high-value consumers both directly (by continually adding new and better consumer-facing features to its devices and its App Store platform, *see supra* § VIII) and indirectly (by adding developer-facing features to its platform, which attract more and better developers, which in turn attract more and higher value consumers, *see* § VIII; Hitt TT).

558. Second, Apple's IAP functionality facilitates simultaneous transactions, including the efficient collection of its commission. Schmalensee TT. This provides more reliable exchanges between user and developer and also eliminates burdensome and unreliable self-reporting obligations on developers. Schmalensee TT.

559. Third, Apple's intellectual property license, policies, support to developers have had a democratizing effect. Schiller TT; *see also supra* § VII.B. Prior to the App Store, developers were typically large companies (e.g., Electronics Arts and Epic Games). Schiller TT. That changed with the App Store; the tools and services Apple made available allowed smaller game developers to compete unlike ever before. Schiller TT.

560. As discussed above, the robust slate of SDKs, APIs, and other development tools allows developers to make apps faster, easier, and cheaper. *See supra* § VIII. Those benefits are particularly valuable to small developers who lack the budgets to employ vast teams of programmers for long periods of time. Schiller TT.

561. From the start, Apple also provided ongoing marketing and editorial support to developers as well as billing and taxes services. Schiller TT; *see also supra* § III. These benefits are disproportionately valuable to small developers, most of which have little to no marketing budget. DX-3800 at -710.

562. As early as 2010, developers praised the "App Store democracy . . . where everyone has equal opportunity to find success and prosper"—even a two-person development team with a shoestring budget. DX-3972 at -419. Apple has continued to promote that environment, with the Small Business Program among the most recent examples. DX-4168; *see also supra* §VII.C.

563. Epic is an example of the massive growth and success developers can and have achieved by using the App Store and associated tools and services provided by Apple. Epic used a free distribution model with in-app purchases. DX-3691 at 7–8. This business model is made possible by the App Store's commitment to permitting (and, indeed, incentivizing) free-to-download apps, Schmalensee TT, and the introduction of IAP, *see supra* § III.F. And Apple's services have significantly contributed to *Fortnite*'s rapid growth since 2017. DX-3233 (showing large numbers of new players in Fortnite between January and April 2019 driven by the iOS platform); DX-4205 at -516 (Apple expanded Epic's potential user base by providing it with a memory entitlement that allowed *Fortnite* to run on 2 GB devices, which was not possible on Android).

564. As a result, Epic has earned more than $700 million through *Fortnite* transactions on iOS devices. Hitt TT.

565. In all, the App Store ecosystem has generated as much as $61 billion from the billings and sales of digital goods and services, over 70% of which has gone to developers. Hitt TT. In 2019, the App Store ecosystem generated $138 billion in U.S. billings and sales, including $22 billion in digital goods and services, $93 billion in physical goods and services, and $23 billion in in-app advertising. DX-3181 at 4.

D. Prices are decreasing, not increasing.

566. When Apple first allowed developers to sell native applications on the App Store, it adopted a 30% commission for paid downloads—a "breakthrough" price consistent with the rate Steam had begun using a few years prior. DX-4062 at -523; *see also supra* § XVIII.D.. As Epic's expert conceded, this was not an supracompetitive price. Evans TT. Of course, many apps then—and since—were free and subject to no commission. *See supra* §§ VII & XVIII.A.

567. Apple has never increased its commission rate. Hitt TT; Schiller TT; *see also supra* § VII.C.

568. Nor has Apple's commission rate ever exceeded the standard industry rate. Hitt TT; Schiller TT; *see also supra* § XVIII.D.

568.1 [redacted] Apple uses the same commission structure on the Mac App Store. Evans TT. Epic's chief economic expert opines that there is no reason to believe the Mac App Store price was supracompetitive, and Epic also has steadfastly taken the position that the 30% commission imposed by console platforms may not be supracompetitive either. Evans TT.

568.2 Moreover, many Android markets in China—in which the relevant, comparable market is not monopolized—charge a 50% commission on game app transactions, with even the largest developer, Tencent, being able to negotiate no lower than a 30% commission. Evans TT.

568.3 To be sure, Epic has decided to charge a lower commission rate in the Epic Game Store, but that platform is a poor comparator to the App Store. *See supra* § XI.E. After all, EGS has never been profitable, provides developers with inferior services and a smaller customer base, delivers a less robust user experience compared to the App Store, and has been subject to significant security breaches. *See supra* § XI.E.

569. Moreover, Apple's commission has only decreased over time—in both actual and effective measures. Hitt TT; *see also supra* § XVIII.A.

570. The actual commission rate has never increased beyond 30%, and Apple has exempted certain kinds of apps or transactions from paying any commission and reduced the rates for others, such as for subscriptions and apps made by small developers. *See supra* § VII.C.

571. [redacted]

572. In addition, the value derived from the App Store is commensurate to the amount paid by developers. As Epic recognized, Apple's commission is not a payment processing fee. DX-4306 at -100–01. Rather, it is a price developers agree to pay to use Apple's platform; license its intellectual property; access the iOS user base; benefit from IAP and other integrated features of iOS; and receive Apple's services, including technical support, customer service, and marketing. DX-4306 at -100; Schiller TT. The commission therefore derives from, and is consistent with, the value developers can and do receive from Apple. Schiller TT.

573. Indeed, the tools and services offered by Apple surpass those offered by many other platforms that charge a 30% commission. *See supra* § VIII. As discussed above, Apple has continued to innovate in each part of its ecosystem—software, hardware, and services (as well as the integrations between them)—to improve game app transactions on the App Store. Hitt TT; Malackowski TT; DX-5335; *see also supra* § VIII.

574. At bottom, Apple's business model has resulted in lower game app transaction prices but increasing app availability and greater revenue for developers—procompetitive benefits for every market participant. Hitt TT; Schiller TT.

E. Output is increasing, not decreasing.

575. As discussed above, the total number of digital game transactions on the App Store has increased. Hitt TT; *see also supra* § XVIII.C. Developers' total annual game revenue on the App Store also has increased—by 2,600% from 2010 to 2018. Hitt TT. This far outpaced the broader digital game transaction market, which grew by 448% during the same time frame. *See supra* § XVIII.C.

576. The number of game app developers that develop apps for the App Store also has dramatically increased. *See supra* § IX.A. The App Store's user base has grown dramatically. *See supra* § IX.A. The number of game apps available on the App Store has dramatically increased. *See supra* § IX.B. And sales of iOS devices and other devices on which consumers perform digital game transactions have increased over time. *See supra* § IX.C.

577. In addition to this quantitative increase in output, the quality of game apps available on the App Store has increased, with iOS now able to download and play high-end "AAA" games from the App Store. *See supra* § IX.D. Indeed, iOS users spend more on their game apps—a barometer for the quality of those apps—than other mobile users. *See supra* § IX.D. [redacted]

F. The App Store provides a trusted platform for transactions.

578. Security and privacy are key commitments at Apple. Cook TT; Schiller TT. Thus, Apple has focused on creating an ecosystem where users can trust the content that Apple publishes, making consumer safety the first order of concern. Cook TT; Kosmynka TT. Within Apple, it is well known that the purpose of the App Store is to be a safe and trusted place to get apps. Kosmynka TT.

579. While the security benefits to consumers are obvious, the safety and security afforded consumers by this process also benefits developers. Kosmynka TT. That is because such a record of safety and security attracts more users and increases their willingness to download (and pay money for and on) apps, which in turn increases developer revenue. Schmalensee TT.

580. The safety, security, privacy, and usability delivered by the App Store—including as a result of its policies and rules—provides consumers a valuable, differentiated option from Android platforms. Rubinfeld TT. This drives competition between iOS and Android platforms. Rubinfeld TT.

XXI. THE APP STORE BUSINESS MODEL IS BUTTRESSED BY OVERWHELMING PROCOMPETITIVE JUSTIFICATIONS.

A. Apple's conduct is grounded in its legitimate interest in prioritizing user experience.

581. The very foundation of the App Store is that consumers can trust that they can safely and easily download high quality apps for their iPhones and iPads that perform as promised, work on their specific devices (whether an iPad or an iPhone), do not jeopardize the safety, stability, or reliability of their devices, and offer the privacy protections that consumers have come to expect from Apple. Schiller TT. The App Store exists to enhance consumers' experience with Apple devices.

582. Apple's iOS ecosystem is designed around these principles. The App Store experience is intended to make app transactions seamless and user-friendly. Schiller TT; Federighi TT; *see also supra* §§ II–IV. Apple's walled garden—with rigorous app review and extensive guidelines and screening procedures—ensures users receive high-quality apps. Rubin TT.

583. Apple is the operating system *and* device manufacturer and therefore has a special interest in protecting the integrity and reliability of mobile devices. Schiller TT; Cook TT. The contractual and technical restrictions at issue were intended to protect the functionality of the device. *See supra* §§ IV & VI.

584. Epic's economist, Dr. Evans, concedes that Apple has established a reputation for the high quality of its products. Evans TT. And iOS consistently scores higher than Android on metrics of user satisfaction and perceived platform quality. Rubin TT.

585. The curation processes enabled by the "contractual" and "technical restraints" Epic challenges in this case are critical to ensuring low-quality or malicious apps stay out of the App Store and the best apps rise to the top. Rubinfeld TT. The immediate goal of the App

Store Review Guidelines is to provide quality assurance and ensure that users have a good experience with any apps they download from the Store. Rubinfeld TT; *see also supra* § VI.D. And as described above, Apple's high standards and robust review process routinely identify and reject apps that are malicious, offensive, impermissibly intrusive, or otherwise low quality. *See supra* § VI.D.

586. These processes—developed through considerable investment and experience—are not easily replicated, as the experiences of other platforms show. *See supra* § VI.E. By excluding apps that fail the app-review process and not allowing sideloading from third-party sources, Apple ensures that in almost every instance users will be exposed only to high quality apps. Rubinfeld TT; *see also supra* § VI.

587. This instills trust: iOS users know that when they transact on the App Store, they are using a reliable and secure platform and will receive a product that has been vetted to meet Apple's high standards. Rubinfeld TT; Schmalensee TT. This consumer confidence in turn enriches the App Store ecosystem (and developers) as they are more prone to download, use, and pay for developers' apps. Schmalensee TT; Rubinfeld TT.

588. These benefits are enjoyed system-wide by users and developers. Rubinfeld TT. But by the same token, a developer that circumvents app review or otherwise evades Apple's guidelines, as Epic did, threatens to give users a negative impression of the entire App Store. Rubinfeld TT. Such a negative impression harms not just Apple but also all developers that offer apps on the App Store. Rubinfeld TT.

589. For similar reasons, the challenged "contractual" and "technical restraints" are key to maintaining Apple's commitment to security, safety, and privacy. *See supra* § IV. Mobile phones play a unique role in consumers' lives: Their convenience has led users to store more of their private information on them, and users rely on their devices' functionality. Schiller TT; Rubin TT.

590. Indeed, Epic itself has recognized that consumers expect and value safety and protection from malware and privacy breaches. Grant TT; Sweeney TT. 84% of U.S. iPad owners report that the security and privacy of their information was an important factor in their decision to purchase the iPad. DX-3465 at -095.

591. Accordingly, Apple has made security and privacy an even bigger focus of the iPhone, iOS, and the App Store. Schiller TT. This begins with Apple's creation of high-quality devices, like the iPhone, that contain built-in privacy features and software. Schiller TT. But Apple also built from the ground up—and continues to improve—a mobile-tailored operating system in iOS, to ensure safety and reliability. Schiller TT. And the App Store is designed to further safeguard users' privacy and security. Schiller TT.

592. Malicious activity on jailbroken phones illustrates the risks that can be posed by increased access to third-party app distribution. Rubin TT. There are many documented cases of malware being distributed on jailbroken iPhones in ways that are not possible on non-jailbroken iPhones. Rubin TT.

593. Thanks in significant part to Apple's restrictions and review process, Professor Rubin found iOS security to be generally superior than that of non-iOS platforms, such as Android. Rubin TT. For example, although Google revised its app store review process in 2015 to include some element of human-guided analysis, Google acknowledged that its human-based review may not be as robust as those from rivals. Rubin TT. In fact, Professor Rubin identified multiple examples of malicious apps found on the Google Play Store that likely would have been rejected in the App Store review process. Rubin TT.

594. Apple's focus on security is no mere pretext—its security processes and features have made iOS significantly safer than the Android mobile platform. *See supra* § VI; Rubin TT. Professor Rubin found, for instance, that Apple's mandatory-verification procedures for developers is a very important security deterrent to prevent fraud and to hinder arbitrary distribution of malicious or inappropriate content. *Id.* He also found that iOS's ban on the installation of unsigned, untrusted apps enhanced iOS security relative to Android. Rubin TT.

595. Indeed, Mr. Sweeney himself is an iPhone user that finds Apple's approach to privacy to be superior to Google's. Sweeney TT. And other systems like Switch, PlayStation, and Xbox also have adopted "closed platforms" as Nintendo, Sony, and Microsoft do not allow users to install software on their consoles outside of the platform's official store. Sweeney TT. Similarly, the Epic Games Store, Samsung, Microsoft (including Xbox), and Google Play all have application review processes and moderate the app content. Schmalensee TT.

B. The challenged contractual provisions prevent free-riding on Apple's procompetitive investments and intellectual property.

596. To the extent that the license terms actually restrain a developer from using Apple's IP to distribute outside the App Store, those terms serve the valid purpose of preventing free-riding on Apple's IP and allowing Apple to earn a return on its IP. Developers who distribute apps through the App Store must first agree to Apple's DPLA, which includes a percentage commission payable to Apple for certain transactions and places limits on what they can do with Apple's intellectual property. *See supra* § VI.B.

597. The restraints at issue serve many purposes, including the prevention of free-riding, Malackowski TT, which economists and courts widely recognize as a procompetitive justification for a vertical restraint that prevents free-riding, Rubinfeld TT. In particular, Apple's policies that all native iOS apps written using Apple-licensed software and tools be available only through the App Store prevent free-riding on: (1) Apple's innovation and investments, and (2) other developers that create safe, secure, high quality apps and otherwise conform with developers' responsibilities under the App Store policies and rules. Rubinfeld TT.

597.1 Apple created, continually improves, and maintains its iOS devices, its tools for the iOS platform, the iOS operating system, and the App Store (along with its policies and rules) that creates a large installed base of iOS devices and users and generates a high demand from iOS users for iOS apps. Rubinfeld TT. In the 2020 fiscal year

alone, Apple spent $18.8 billion on research and development. DX-4581 at 23. Apple is entitled to a return on its enormous investment and is not required to allow others to benefit from its innovation for free. Malackowski TT. Indeed, the promise of return on investment is a major incentive for inventors to invest in costly research and development. Malackowski TT.

597.2 Further, absent Apple's contractual provisions that prevent free-riding, developers could obtain a private benefit (an incremental lift in demand due to the iOS ecosystem's high reputation) but incur an ecosystem-wide cost (lowering the ecosystem's reputation due to bad experiences by users of the rogue app). Rubinfeld TT.

597.3 Unlike its competitors, Apple does not license its IP to OEMs and is permitted to recover a return on its IP in part through the design and sale of its own devices and services, including the App Store. Malackowski TT.

C. The licensing terms in Apple's DPLA are an integral part of a procompetitive intellectual property licensing arrangement.

598. The introduction of new products is almost always beneficial to consumers. Rubinfeld TT. The introduction of the iPhone and the App Store are no exceptions. Rubinfeld TT. And when innovators introduce new products—especially entirely new devices or platforms like the iPhone and App Store—it is appropriate for them to make design decisions that they think best for the success of the new device or platform. Rubinfeld TT.

599. By virtue of its ownership of crucial intellectual property, Apple could choose to be the exclusive developer of iOS apps for the iOS ecosystem. Rubinfeld TT.

600. But third-party developers collectively bring to bear a broader range of ideas, exposure to the needs of diverse (sometimes niche) groups of consumers, their own intellectual property rights, and skills and talents. Rubinfeld TT.

601. Thus, the licensing terms in Apple's DPLA are an integral part of a procompetitive intellectual property licensing arrangement. Rubinfeld TT. By choosing to license its intellectual property to third-party developers, Apple creates an integration that can lead to more efficient exploitation of the intellectual property, benefiting consumers through the reduction of costs and the introduction of new products. Rubinfeld TT. As the Department of Justice and Federal Trade Commission's Antitrust Guidelines recognize, intellectual property licensing allows firms to combine complementary factors of production and is generally procompetitive. Rubinfeld TT.

602. The challenged licensing terms do not restrain any competition that would occur in the absence of the DPLA. Rubinfeld TT.

XXII. EPIC'S PROFFERED ALTERNATIVES FOR IOS APP DISTRIBUTION WOULD UNDERMINE APPLE'S BUSINESS MODEL

603. Epic seeks an order preventing Apple from (among other things) "[r]estricting, prohibiting, impeding or deterring users of iOS devices, through technical, contractual, financial, or other means, from downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store." Dkt. 276-1 at 3. Epic also seeks to "enjoin Apple from restricting, prohibiting, impeding or deterring the use of in-app payment processors other than Apple's In-App Purchase." *Id.* at 6.

604. Epic has not offered any evidence that these are less restrictive alternatives that would allow Apple to achieve its legitimate business goals.

A. Epic's proffered "solutions" are premised on the counterfactual that Apple will provide free access to its intellectual property.

605. As discussed above, Apple has protected its innovations by obtaining patents, trademarks and copyrights, as well as maintaining trade secrets. *See* § V. Apple holds over a thousand patents—as well as copyrights, trademarks, and trade secrets—in its iOS ecosystem, including technology in and relating to iOS, its App Store, and app developer tools. Malackowski TT. This includes Apple's iOS features and functionality as well as its SDKs, APIs, and other development tools. Malackowski TT.

606. Compelled licensing of Apple's IP on Epic's preferred terms and conditions would not serve the procompetitive purposes of the DPLA, would significantly increase Apple's costs, and would chill Apple's incentives to invest and innovate in its IP. Rubinfeld TT; Malackowski TT.

B. Epic's proposed relief would compromise the security of the iOS platform.

607. As discussed above, Apple has innovated relentlessly—and invested enormous resources—to ensure its ecosystem is the most secure in the industry. *See* §§ IV & VIII. Epic's proposed "solutions" would not maintain the same degree of security within the iOS ecosystem.

608. First, third-party app distribution through alternative stores or sideloading would undermine Apple's app review process by preventing it from applying its rigorous curation standards. Rubin TT.

609. As explained above, the App Store's review process contributes significantly to iOS apps' safety, reliability, and quality. *See supra* § VI.E. But as Mr. Sweeney admits, Epic's requested remedy would mean that Apple would not necessarily review apps obtained through EGS (or another third-party). Sweeney TT.

610. Without Apple's app review process, apps would not be vetted through Apple's industry-leading review process. *See supra* § VI. This would naturally harm the user experience: Users would be more likely to encounter malware, offensive or inappropriate material, and otherwise low-quality apps. Rubin TT. Moreover, Apple would not necessarily manage the entitlements provided to apps, which could create additional risks. For example, if apps are distributed through alternative stores or sideloading, they may be granted elevated

privileges that permit them to bypass certain on-device security or otherwise obtain access to software and hardware on the iPhone such as the microphone or camera. Rubin TT.

611. This is not a hypothetical concern: Third-party app stores host ***99.9%*** of discovered mobile malware. Rubin TT; *see also* DX-4401 at 3–4.; DX-4438 at 3–4; DX-4934 at 8.

612. The existence of third-party app distribution also would denigrate the overall effectiveness of Apple's app review process. Rubin TT. As discussed above, both the machine and manual review used by Apple is informed from the decisions Apple has made with respect to tens of millions of apps in the past. Rubin TT; *see also supra* § VI.D. Because Apple would have no visibility into apps from other app stores, important information like red flags, trends, new malware, and other information from the review of these apps would not make it into Apple's databases, thereby effectively rendering app review less useful over time. Rubin TT.

613. By the same token, it would be difficult for other app stores—which did not consider apps distributed through the App Store—to generate a similar catalog of review decisions to that of Apple. Rubin TT. Allowing multiple app stores therefore would make review decisions at each store less informed and less effective. Rubin TT.

614. Reducing the quality of screening procedures would not only risk users' safety but also erode their trust of the iOS platform. Rubin TT; Federighi TT. And if iOS users lost trust in the platform, they may refuse to download software updates or take other risk preventative measures recommended by Apple—exacerbating security vulnerabilities. Rubin TT.

615. Even if it were technically possible to replicate every step in Apple's app review process, there is no indication that other third-party app stores could or would do so. Rubin TT.

616. Some third-party app stores could have nefarious incentives, such as to distribute malware to iOS devices. Rubin TT.

617. Even for well-intentioned third-party app stores, replicating Apple's app review requires extensive commitment with financial support, intelligence, manpower, and time. Rubin TT.

618. Many third-party app stores simply lack the resources or incentives to conduct the same level of review and analysis as Apple. Rubin TT; *see also* DX-3194 at -174 (observing that a store-within-a-store represents "the worst of the worst" type of threat to Apple's ecosystem). [redacted]

619. In either scenario, third parties have a direct interest in maximizing the revenue from their app store, even if (as is likely to happen) users blame Apple for any security breach as a result of the third-party app store's lackluster review process. Rubin TT.

620. Epic itself provides an example: In an effort to bypass Apple's commission and more conveniently distribute its apps, it considered disregarding Apple's Enterprise certificate

policies to attempt to skip past the App Store review process. Rubin TT. It did so despite knowing that Apple prohibited using an Enterprise account for external distribution, and that certain malware in the past has been able to bypass app review. Rubin TT.

621. Nor was this an isolated issue. For example, there was a series of leaks in the binaries for the *Fortnite* installer after Epic launched it on Android devices via sideloading in August 2018, which led to malware and fraud. DX-4249 at -296. [redacted]. And as a programmer noted on another occasion, "[o]verall a bit worried about the security aspect of this all, a lot of malware already doing the rounds impersonating *Fortnite* app." DX-3809 at -341.

622. A second example is the contrast between the App Store and another app store, GOG, which operates on PCs and has a business model of restoring old, unworkable, or unoptimized games. Rubin TT. Because GOG's purpose is to make unworkable games work again, not to provide secure apps, it likely prioritizes security less than the App Store, which makes security a primary focus and whose business model is to check that working apps properly function in ways they are represented to users. Rubin TT. Thus, one consequence of third-party app stores not sharing Apple's resources or incentives for a stringent app review process is that users will be afforded fewer security features and be exposed to more malicious or offensive software. Rubin TT.

623. Epic's proposed injunction could impose additional costs and risks on users and Apple. Rubin TT. If Apple were prohibited from creating and enforcing policies that have the "effect of impeding or deterring competition among app distributors," Apple could be constricted in what steps it can take to provide security measures or otherwise ensure that app stores meet minimum security guidelines. Rubin TT. In this scenario, Apple could be unable to leverage the experience with its own technology and standards in seeking to ensure that third parties meet those standards. Rubin TT. Apple's users, however, would face additional burdens from the need to take steps to try to determine whether an app store is secure and trustworthy. Rubin TT. Apple also could have to incur additional costs in connection with monitoring its ecosystem and providing support to users who face risks from third party app stores but may attribute some of the responsibility to Apple, as the platform provider. Rubin TT. Apple could need to resolve various disputes with third-party app stores, and may even need to revoke their licenses to operate stores and engage in litigation (as it is doing with Epic). Rubinfeld TT. None of those are costs that exist in the current system. Rubin TT; Rubinfeld TT. And even then, Epic's requested order would have the extraordinary result of preventing Apple from deploying features that it has developed at enormous expense to enhance consumer security. *See supra* §§ III & VIII.

624. In addition to these problems with Epic's proposed solution, allowing stores-within-stores also would force Apple to make available to developers various aspects of its iOS technology, including technology tht it has previously not made available before—as is its right under the intellectual property laws—to third parties. Malackowski TT. In addition, allowing stores-within-stores, and the distribution of apps through alternative sources, could lead to various security risks, including but not limited to allowing third parties to install root certificate on iOS for app verification, potential propagation of malicious apps

on iOS using a stamp of a compromised third party or a third party that maintains an insecure app review process, or otherwise permitting the installation of apps with entitlements that have not been reviewed for malicious or other ulterior motives. Rubin TT.

625. At bottom, Epic's requested order enjoining Apple from "[r]estricting, prohibiting, impeding or deterring users of iOS devices . . . from downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store," Dkt. 276-1, would have the extraordinary result of preventing Apple from deploying features that it has developed at enormous expense to enhance consumer security.

C. Epic's proposed relief would undermine the reliability and quality of the iOS ecosystem and increase Apple's costs.

626. Reliability refers to the concept that a system should consistently operate as expected. Rubin TT. Because reliability and security are intertwined, and reliability ensures that security controls work as expected, a decrease in security (as discussed above) is likely to coincide with a decrease in reliability. *Id.*

627. Epic executives have recognized the importance of app quality in the competitive landscape, Sweeney TT, but Epic's proposed solutions would degrade the reliability and quality of apps.

628. Apple's App Store Review Guidelines are designed not only to ensure that apps function properly, but to promote a high-quality experience for the user. Rubin TT. Because of this diligence in ensuring app quality, iOS consistently scores higher than Android on metrics of user satisfaction and perceived platform quality. Rubin TT. Indeed, Dr. Evans concedes that Apple has established a reputation for reliability and quality of its products, and that Apple's brand is recognized as one of the most valuable in the world. Evans TT.

629. Apple has long provided a level playing field on the App Store, where "the best apps will rise to the top because of reviews, ratings, and downloads." Shoemaker depo. at 172:20–22. This meritocracy benefits both consumers, who can more easily find high-quality apps, and developers, who can enjoy success for high-quality apps. Schmalensee TT.

630. For the same reasons described above, Apple would incur significant additional costs in attempting to maintain the reliability and quality of apps on the App Store. *See supra* § XXII.C.

D. Epic's proposed relief would undermine Apple's ability to maintain and enforce consumer privacy protections.

631. Apple believes that privacy is a human right. DX-4391 at -603. Apple takes measures to ensure user privacy in ways such as, including but not limited to, requiring users to opt in before sharing data and implementing differential privacy, which allows Apple to analyze de-individuated data. Rubin TT.

632. As Dr. Rubin explains, security and privacy are two sides of the same coin. Privacy relates to protecting data from unauthorized access or disclosure. Security and privacy are intertwined in that security controls dictate the level of privacy enforced, and privacy technologies can guarantee a higher degree of security. Rubin TT.

633. For the reasons discussed above, Epic's proposed "solutions" will degrade iOS security. *See supra* § XXI.C. This means that they will also degrade users' privacy. Rubin TT.

634. The Chinese marketplace presents an example. Rubin TT. Epic's experts have cited China's Android market as a competitive field. Evans TT; Rubin TT. But the multitude of app stores there has increased the frequency of malware downloaded by users. Rubin TT. In fact, a 2020 report showed that the top three stores worldwide where users were most likely to download malware were all from China and heavily used by Chinese users. DX-4934 at 6. As far back as 2013, studies have shown that the fragmentation in China's Android market due to the "little control Google has over it" has resulted in "nearly 35 percent of the Android apps . . . secretly stealing user data unrelated to the app's functionality." DX-4555 at -096.

635. For the same reasons described above, Apple would incur significant additional costs in attempting to maintain the privacy protections of apps on the App Store. *See supra* § XXI.C.

E. Apple would have to redesign iOS to permit the "solutions" Epic seeks.

636. Unlike macOS, the iPhone is not designed to facilitate sideloading of third-party applications. Rubin TT; *see* § IV.B (describing reasons for designing iOS in a way that was more secure than macOS).

637. Epic's proposed "solutions" would require Apple to reengineer iOS at great expense. Federighi TT. This would countermand Apple's original decision to not to allow other stores within the App Store. Schiller TT.

XXIII. DR. ATHEY'S "ECONOMIC MIDDLEWARE" APPROACH DOES NOT MAKE SENSE

638. Dr. Athey defines a new concept in her report that she calls "economic middleware," or simply "middleware" as technologies that have one or more of the following effects: (1) reduce user applications-related switching costs, (2) reduce user applications-related mixing-and-matching costs, (3) reduce developers' costs of providing services that enable user app migration and synchronization to multiple platforms, further reducing user app-related switching and mixing-and-matching costs; and (4) reduce developers' multi-homing costs. Athey TT.

639. Middleware, as technically defined, aims to ease the development of creating software for a given operating system as well as ease the ability to create software (e.g., games) that works on multiple devices and operating systems. Hitt TT; Schmalensee TT.

640. Dr. Athey's "economic middleware" is different from the well-established definition of middleware, which is software that lies between an operating system and the applications running on it. Hitt TT. Essentially functioning as a hidden translation layer, middleware enables communication and data management for distributed applications. Hitt TT. It is sometimes called plumbing, as it connects two applications together so data and databases can be easily passed between the pipe. Hitt TT; Athey TT. There is no question that Apple permits middleware to run on iOS. Hitt TT.

641. Dr. Athey's methodoly—and thus her conclusions—are unreliable. Hitt TT; Schmalensee TT; Rubinfeld TT.

642. First, reducing switching costs does not necessarily increase competition, and Dr. Athey cites no economic literature supporting her belief that competition necessarily would be enhanced here. Athey TT; Rubinfeld TT.

643. Rather, the impact of switching costs on equilibrium prices is an empirical question. Rubinfeld TT. Dr. Athey has not performed the empirical analysis required for her opinion to be reliable. Rubinfeld TT.

644. Moreover, multi-platform app stores do not typically offer significant technical middleware solutions that improve developers' abilities to write apps for specific operating systems. Hitt TT. At most, multi-platform app stores typically offer some APIs that serve a limited middleware role. Hitt TT.

645. Forcing a device manufacturer to accept the operation of a multi-platform app store on their device need not serve as "economic middleware" and could in fact generate additional costs for consumers and developers that Dr. Athey has not considered. Hitt TT. For instance, developers that wish to offer their app on both Steam and EGS would have to utilize two sets of APIs for the same operating system, increasing costs. Hitt TT. And there is no way for a multi-platform app store to ensure compatability of apps across platforms. Schmalensee TT.

646. Dr. Athey's proposals to reduce switching costs between the iOS and other platforms also would reduce product differentiation between iOS and other platforms—a manifestation of the intense product-design competition between platforms. Rubinfeld TT. Thus, Dr. Athey's proposal would reduce existing competition. Rubinfeld TT.

647. Dr. Athey's analysis also ignores the role of Apple's intellectual property. Rubinfeld TT. She acknowledges that her proposed "economic middleware" would connect to operating systems through APIs—which at least in the case of iOS would require the use of Apple's intellectual property. Athey TT. But she does not assess the costs, much less justify, the imposition of an obligation on Apple to redesign its existing intellectual property—devices and software—as well as a subsequent duty on Apple to license that modified intellectual property on the terms and conditions Epic prefers. Rubinfeld TT. Indeed, Dr. Athey did not speak to any engineers, review any documents from Apple or Epic regarding the implementation of "economic middleware" in iOS, or review any Apple code in analyzing whether and how "economic middleware" could be implemented in iOS. Athey TT.

648. In addition, most if not all of the gains Dr. Athey imagines would come from her hypothetical multi-platform app stores (e.g., reduced "mix-and-matching" costs and reduced switching costs) are already possible and have in fact been implemented by developers of iOS apps, including Epic, without the need for multi-platform app stores. Hitt TT. For instance, until the Hotfix, iOS *Fortnite* users could freely transfer their content, purchases, and game progress between devices on which users play the game. Hitt TT; Athey TT. Indeed the majority of top games in terms of revenue generated through the App Store already have systems that allow users to transfer their content to a different device (mobile or otherwise). Hitt TT.

XXIV. IAP IS NOT A SEPARATE PRODUCT BUT RATHER AN INTEGRAL PART OF THE APP STORE.

649. IAP did not exist prior to the App Store. Schiller TT. It was specifically developed to provide App Store developers with the ability to offer enhanced in-app content without having to create a separate version of the app for users. Schiller TT.

650. IAP is associated with several areas of commerce within the Apple ecosystem, including setup of an account, purchase and transacting, financial management tax, fraud prevention steps, and customer support. Gray TT. These areas are connected to various areas of Apple Media Products ("AMP"), such as the App Store, the iTunes Store on iOS, Apple Music, and iCloud. Gray TT. This suite of services goes well beyond mere payment processing: As Epic's executives discussed internally, "when you come to IAP within a game, outside of AppStore and Google Play, there is really no truly comprehensive payment solution that does everything needed for a game company." DX-4496 at -170.

A. IAP is an integrated feature of iOS app distribution.

651. IAP is not merely a payment processor or payment settlement form. Schmalensee TT; Schiller TT. In fact, IAP does not process payments itself—that function is performed by third parties like Chase. Schmalensee TT. Rather, the bundle of IAP-related services allows consumers to view their purchase history and to restore purchases, Gray TT, provides family account sharing and global parental controls, Schmalensee TT, enables customer support for in-app transactions issues, Schiller TT, and boosts transaction security, Gray TT. IAP is thus an integrated suite of services within the iOS app distribution feature set. Schmalensee TT; Gray TT; DX-3891 at -612; *see also supra* § III.F.

652. IAP supplies multiple services to both developers and users that are inseparable from the transactions facilitated by the App Store. Schmalensee TT. The very purpose of the App Store is to provide transaction services involving digital content simultaneously to both developers and consumers. Schmalensee TT. Consumers make payments and receive products, and developers receive payments and deliver products (or have Apple make delivery for them). Schmalensee TT. For transactions for which the developer expects a payment, delivery of that payment is an integral part of the transaction, and making that payment is an integral part of the transaction for the consumer involved. Schmalensee TT.

653. Payment and the accompanying services supplied by IAP are thus inputs into the transactions provided by the App Store. Schmalensee TT. The two sides of a transaction platform are not economically separable; if a developer wishes to earn revenue from its digital products, app distribution is inseparable from payment. Schmalensee TT.

B. No demand exists for IAP that is separate from distribution via the App Store.

654. There is no separate demand for IAP and app distribution. Schmalensee TT.

655. Developers have a contractual obligation to pay a commission to Apple for in-app purchases. *See supra* § VI.C. Thus, even if developers were allowed to contract directly with third-party payment processors or do so via some intermediary system like Square, any developer using another payment processor instead of IAP would have to pay that processor's fees in addition to the commission that it is contractually obligated to pay Apple. Schmalensee TT; DX-3256 at 345–46; Gray TT. Therefore, because using third-party payment processors would be *more* expensive for developers, no rational developer would use them. Schmalensee TT.

656. Although Apple has long collected commissions through IAP, Apple has never charged separately for the use of its payment solution. Schiller TT. Nor has Apple ever marketed its IAP technology for use on other digital transaction platforms or offered to sell IAP services separately. Schiller TT; Schmalensee TT.

657. Similarly, other platforms require developers to use their game payment systems, including Google Play, Steam, Samsung's Galaxy Store, Xbox Live Store, and Sony's PlayStation Store. Evans TT. There is no evidence that these platforms have separately marketed or offered for sale their payment solutions.

658. The fact that some developers like Epic have tried to circumvent IAP by using their own payment processors does not provide any valid evidence that there is a separate demand by these developers for such services. Schlamensee TT. Rather, it shows that developers would prefer to not pay, or pay less in, commission to Apple for Apple's services and the use of its intellectual property. Schlamensee TT.

659. In the but-for world contemplated by Epic—in which IAP was optional—Apple would still be entitled to charge a commission whether or not developers chose to use IAP. Schmalensee TT. Given that third-party payment processors would charge an *additional* fee—and that constructing a payment solution would require investment by the developer—there is no reason to believe that developers would prefer unproven payment mechanisms that simply added to their costs for app distribution. Schmalensee TT.

XXV. EVEN IF IAP WERE A SEPARATE PRODUCT, IT HAS NOT BEEN TIED

A. There is no "iOS in-app payment processing" market.

660. Dr. Evans claims that there is a relevant market for payment solutions for accepting and processing payments for digital content purchased within an iOS App. Evans TT. As an initial matter, it is unclear what the alleged product would be in an "iOS in-app payment

processing market" because, as Dr. Evans acknowledges, developers must create payment solutions by working with payment processors or gateways. *See supra* § XXIV.A; Schmalensee TT.

661. Epic's proposed definition hinges on the existence and application of the challenged restraints as Epic alleges; without those alleged restraints, the relevant market would be different. Evans TT.

662. Dr. Evans seeks to support the existence of such a market through an inapt comparison payment processing services. Evans TT. As discussed above, IAP is not a mere payment processing technology as IAP provides a far broader suite of services than mere payment processing. *See supra* § III.F & XXIV. Even according to Dr. Evans, a competing payment solution would have to be the creation of a new collobaration between a developer and third-party payment processor. Evans TT.

663. Comparisons of Apple's 30% commission to the transaction fees charged by other third-party payment processors also fail to account for all the benefits Apple provides that payment processors do not. Schiller TT. Even Epic does not view EGS's commission as a payment processing fee but rather a payment "for access to our audience." Allison depo. 222:15.

664. Apple's commission on in-app purchases, collected through IAP, and the fee assessed by third-party payment processors are thus apples and oranges. Lafontaine TT; Hitt TT.

665. Dr. Evans advances an HMT that, he says, shows that payment processing solutions within iOS is a standalone relevant market. Evans TT. This test is fatally flawed and should be disregarded. Schmalensee TT. In order to show that Apple profitably raised the price of payment solutions by more than a SSNIP, Dr. Evans compares Apple's App Store commission rate to the alleged average rate of third-party processing fees. Evans TT. But the App Store commission rate is *not* a payment processing fee. Schmalensee TT. While the App Store does provide payment processing services, it also provides numerous other services to attract and retain both end-users and developers. Schmalensee TT. It is also a critical part of the broader iOS platform, from which users and developers benefit. Schmalensee TT. In other words, it is no surprise that the App Store commission rate is higher than the average rate of third-party processing fees, because developers are paying for a lot more than just processing. Schmalensee TT.

B. Apple has no market power in a market that includes all reasonably interchangeable payment processing providers.

666. If a discrete in-app payment processing market existed, Apple would not come close to possessing market power. Schmalensee TT.

667. There is nothing inherently different about performing the narrow task of payment processing in the iOS context as opposed to any other platform. Schmalensee TT. Accordingly, the relevant market would include payment processing services that operate on a variety of platforms, including large companies like PayPal, Stripe, and Square. Schmalensee TT. Epic's chief economic expert does not offer an opinion on what the

market share of supposedly competing payment solutions would be in an payment processing market. Evans TT. Given the number of large payment processing services, Apple's share would be miniscule. Schmalensee TT.

668. Even if the relevant market were limited to payment processing on iOS, Apple would not exercise market power. Schmalensee TT. Many payment processors that handle payment processing for physical goods or services in the App Store also handle other transactions online. Schmalensee TT. In the market apparently envisioned by Epic, barriers to entry would be minimal and firms would rapidly provide payment processing services for digital transactions. Schmalensee TT.

669. [redacted]. By contrast, the total volume of payment processed by large online payment processors in 2018 was over $1 trillion, with hundreds of billions in the United States. Schmalensee TT. [redacted]

C. There is no contractual "tie."

670. The DPLA does not require developers to monetize their apps using IAP. Schmalensee TT. Offering in-app purchases of digital content—the type of transaction that uses IAP—is just one of the many options offered to developers to monetize their apps in the App Store. *See supra* § VI.A.

671. Most developers choose alternative monetization methods. Hitt TT. Well over 80% of apps, including 76% of game apps, are completely free, and developers pay no commission to Apple for them. Schmalensee TT; Hitt TT. And about 81% of game app developers monetize through in-app advertising, which also incur no commission. Hitt TT; Schmalensee TT.

672. Developers also can choose to offer paid downloads, which do not require the use of IAP. *See supra* § VI.B. Similarly, apps that offer physical goods or services do not use IAP. *See supra* § VI.B. Apple in fact requires that these apps use *non*-IAP payment processing. DX-3695 at -096 (§ 3.1.5(a)); Schmalensee TT.

673. The distinct business models that involve in-app purchases are the Freemium and Paymium models, offered by only about 33% and 6% of developers, respectively. Schmalensee TT. Yet even for these models, in-app content often can be purchased and used without IAP. Gray TT; Schmalensee TT. As the App Store Guidelines explain, "[a]pps 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." DX-3695 at -093–96 (Sections 3.1.1 & 3.1.3).

674. Indeed, Epic has recognized these alternative means of monetization and considered requiring *Fortnite* players to purchase V-Bucks or Battlepasses in Safari rather than in the *Fortnite* app. DX-4575 at -886. Epic has also sold promotional material inside *Fortnite*

for which Apple collects no commission. Lafontaine TT. And Epic recently launched a subscription service that, were *Fortnite* still available on iOS, would have allowed Epic to sell subscriptions outside of the App Store that could then be used by iOS users. Hitt TT.

675. Other apps, such as Netflix, at times have opted for similar strategies that do not use IAP. Schiller TT.

676. Consumers, likewise, are not required to use IAP. Again, many applications are completely free and do not offer in-app purchases at all. Schmalensee TT. For those apps that do offer in-app digital content for sale, users may download and access apps for free and purchase the digital content on other platforms. Schmalensee TT. For example, consumers can buy V-Bucks from Epic's website using the Safari or Chrome browsers. Lafontaine TT. Consumers can then use those V-Bucks on the *Fortnite* iOS app without using IAP. Sweeney TT. Indeed, this kind of cross-platform functionality has been a point of emphasis for Apple given its focus on improving consumers' experience. DX-3796 at -513–14.

D. Apple's conduct did not foreclose any significant share of the relevant market.

677. As discussed above, the amount processed by Apple through the App Store's U.S. storefront in 2018 was at most 3% of the total dollars processed in the U.S. by online payment processing companies and less than .2% of the total e-commerce volume in the U.S. in 2018. Schmalensee TT; *see also supra* § XXV.B. Thus, Apple was not capable of foreclosing a significant share of any relevant "payment processing" market. Schmalensee TT.

678. Nor did Apple's IAP requirement prevent developers from using other payment processing services for transactions that did not take place in an iOS app. For instance, 65.6% of the consumers who play *Fortnite* on iOS *exclusively* make purchases on other platforms that they can then access in iOS. Lafontaine TT; Hitt TT.

679. Moreover, IAP facilitated new forms of commerce by enabling the freemium and paymium models. Schmalensee TT.

XXVI. THE APP STORE'S IAP REQUIREMENT IS SUPPORTED BY PROCOMPETITIVE JUSTIFICATIONS

A. Apple's IAP is integral to Apple's ability to efficiently collect its commission.

680. To collect its contractually-agreed commission on sales of in-app digital content, Apple needs to know when such transactions take place. Schiller TT. Ensuring that devlopers use IAP for such sales ensures that happens. Schiller TT. It also ensures Apple's commission is collected efficiently by automatically deducting the commission from transactions. Gray TT.

681. To do so, IAP quickly performs several functions as discussed above. *See supra* § III.F & XXIV. By automating all of these processes, IAP obviates the need for (and expense of) tracking, audit, and collection of Apple's commissions on any in-app purchases of digital content. Schmalensee TT. Indeed, without such automatic processes, a developer using

an external payment mechanism could seek to evade a commission owed to Apple, and Apple would have no technological ability to collect any commissions on the sale. Schmalensee TT. This would lead to laborious reconciliation efforts and dispute resolution—turning an automated, near-instantaneous process accomplished through IAP into a fraught and drawn-out one. Schmalensee TT.

682. It also ensures Apple is able to prevent developers from free-riding on Apple's intellectual property. Rubinfeld TT. Without IAP, developers bypassing IAP would in effect exploit Apple's historical innovations and investments while avoiding paying the renumeration an intellectual property holder is entitled to collect. Rubinfeld TT. Basic principles of economics state that this would chill Apple's incentives to make similar investments and undertake the risk of similar innovations in the future—to the detriment of consumers and developers. Rubinfeld TT. Indeed, the prevention of free-riding is widely recognized by economists and courts as procompetitive. Rubinfeld TT.

B. Apple's IAP provides a safe, secure, efficient, and familiar experience for consumers.

683. The combination of IAP services provides many benefits to consumers. Schiller TT.

684. First, it enables a safe and secure marketplace for private transactions. Schmalensee TT.

685. IAP is at least as secure, and has the potential to be more secure, than other payment processing services such as PayPal because it utilizes a built-in services versus accessing third-party libraries that may or may not have malware. Gray TT. IAP also protects the privacy and security of iOS users by withholding their private information from developers that users may not trust as much as they do Apple. Schmalensee TT; Rubin TT.

686. Apple has legitimate grounds for concern about permitting app developers to handle payment processing themselves, because it exposes consumers to security and privacy risks. Other platforms have had security problems; indeed, *Fortnite* itself has experienced hacking attacks. DX-4921 at 1–3. And Apple's ability to monitor and detect fraud and abuse—and therefore to protect its consumers—would be greatly curtailed. Rubin TT.

687. As discussed above, IAP also is very convenient, single point of sale for consumers. *See supra* § III.F. IAP also provides and enables a number of convenient features for iPhone customers, including family account sharing, global parental controls, payment histories, and restoration and reinstallation. *See supra* § III.F.

688. Consumers experience a seamless process even when they obtain a new device. Schmalensee TT. That is because Apple can carry the consumer's preferences forward because they are linked to the Apple account. Gray TT. The account linkage also allows IAP to offer features and services that would be difficult or impossible for third-party processors to provide, such as a feature enabling users to view their entire purchase history and understand their spending behavior on different apps over time. Schmalensee TT.

689. The safest way an electronic payment can be processed is to have sufficient information available to make good fraud decisions and to implement secure protocols. Gray TT.

690. Indeed, these features represent the significant investment and commitment Apple has made to ensure IAP is continually modernized to improve consumers' experience on the App Store. Gray TT. Apple has continually invested in and modernized IAP-related services to the benefit of consumers and developers. Gray TT; Schmalensee TT.

690.1 For example, in 2011, Apple developed a state-of-the-art technology so that IAP could support the purchase of subscriptions, including for magazines, music streaming and online video content, an innovative offering that developers and users alike have embraced since it was introduced. Schiller TT.

690.2 Apple also changed the way it managed payment removal from a consumer's account to ensure that the purchase process remains seamless. Gray TT.

690.3 Moreover, Apple's 2017 redesign of the App Store made in-app purchases more discoverable by featuring them in search results and on an app's product page, and allowed consumers to start purchasing in-app content on the App Store itself, after which they would be redirected to the app to complete the transaction. Schmalensee TT.

C. Apple's IAP also benefits developers.

691. The direct positive effects of the smooth functioning of IAP that consumers enjoy feed positive indirect network effects that benefit developers. Schmalensee TT. When consumers enjoy a better customer experience, developers indirectly benefit as well due to increasing demand of their apps, and vice versa. Schmalensee TT. In contrast, if some developers deployed third-party payment processors instead of the App Store's facility, their customers' purchase experiences could be less satisfactory. Schmalensee TT. This is likely to make the App Store as a whole less attractive to affected consumers, which, in turn, would make it a less profitable venue for developers. Schmalensee TT.

692. IAP has many benefits to developers as well. For instance, it takes care of currency conversions and tax-law compliance, so developers can focus on creating high-quality apps. Schiller TT; Schmalensee TT. Without IAP, developers would have to contract with a different third-party and incur an additional cost of these services. Gray TT.

693. IAP also conducts fraud-related and credit-worthiness checks, through which Apple essentially vouches for the customers and ensures each developer is paid. Schmalensee TT; Gray TT. These features are particularly useful for smaller developers who would not have consumer trust without the backing of Apple. Schmalensee TT. These fraud checks also help avoid problems like those Epic has experienced using third-party payment processors in *Fortnite*, which caused a "dramatic increase in . . . fraud" in 2020. DX-3683 at -549.

694. Moreover, IAP enabled monetization methods—including freemium and paymium—that had not been previously available in the App Store. *See supra* § III.F. These strategies rely upon IAP's seamlessness and suite of integrated services, which permit developers to offer a convenient pricing strategy that attracts price-sensitive consumers that might want

to use the app in its basic version and earn more from more avid users of the app who are willing to spend to enable additional special features. Schmalensee TT.

695. This strategy is particularly suited to game app developers as it mirrors closely a well-known transaction for games from the pre-digital marketplace—the sale of expansion packs. Schmalensee TT. For instance, The Sims 4 offers at least thirty-seven different types of expansion packs, and World of Warcraft also has a variety of expansion packs. Schmalensee TT. As noted above, Mr. Sweeney himself distributed the first episode of his first computer game for free in the early 1990s and then offered customers the chance to buy its two sequels. Sweeney TT.

696. As a result, many game developers, including Epic, use freemium or paymium models. Schmalensee TT. And they have earned enormous profits doing so. Schiller TT.

D. In light of these many benefits, digital transaction platforms commonly require use of their payment solution for digital transactions.

697. Apple's IAP requirement is not unique among transaction platforms. Indeed, other game transaction platforms impose a similar requirement on developers. Schmalensee TT. As Mr. Sweeney stated with respect to *Fortnite*, every store which distributes Fortnite charges a fee on in-app purchases made on their platform and requires use of the store's payment system to collect that commission. Sweeney TT.

697.1 [redacted]

697.2 The Microsoft Store also provides very specific instructions for purchases of virtual goods and the use of Microsoft APIs: "You must use the Microsoft Store in-product purchase API to sell digital items or services that are consumed or used within your product. Your product may enable users to consume previously purchased digital content or services, but must not direct users to a purchase mechanism other than the Microsoft Store in-product purchase API." DX-4434 at 8 (Section 10.8.1)

697.3 [redacted]

697.4 [redacted]

[redacted]

697.5 The Google Developer Distribution Agreement states "In order for You to charge a fee for Your Products and to be paid for Products distributed via Google Play, You must have a valid Payment Account under a separate agreement with a Payment Processor, be approved by a Payment Processor for a Payment Account, and maintain that account in good standing." DX-3298 at 3 (Section 3.2).

698. These are but a few: Many other platforms—from Steam to eBay—require the use of their own (or their affiliate's) payment processing systems and impose anti-circumvention rules to prevent sellers from avoiding fees or processing transactions outside the platform. Schmalensee TT.

XXVII. THERE IS NO EQUALLY EFFICIENT ALTERNATIVE TO IAP

699. Epic seeks to bar Apple from restricting in any way "the use of in-app payment processors other than" IAP. Dkt. 276-1 at 6.

700. As noted above, IAP is not payment processing technology but rather an integrated suite of features through which Apple can securely, reliably, and efficiently collect the commission payments to which it is contractually entitled. *See supra* §§ III.F & XXIV; Schmalensee TT. Without IAP, Apple would no longer automatically receive those commission payments. Schmalensee TT.

701. Instead, Apple would have to develop an alternative method to collect its commission. Schmalensee TT. Because the injunction Epic seeks would prevent such a mechanism from automatically collecting all commissions, any method would inherently incur higher costs. Schmalensee TT. For example, because any alternative mechanism likely would not allow for instantaneous transactions in which Apple could simultaneously collect its transactions, Apple may have to float credit to developers until they remitted the commission. Evans TT; Schmalensee TT. As a result, Apple would have to calibrate its prices to account for the additional costs of this less-efficient transaction process. Schmalensee TT. Higher costs associated with such a mechanism could leave developers worse off as Apple might well pass on the increased costs. Schmalensee TT.

702. Alternatively, Apple might conclude that reliable alternative methods of collection either do not exist or are prohibitively expensive. Schmalensee TT. In this case, it would decide to cease charging commissions on in-app sales. Schmalensee TT. If Apple were forced to make such a fundamental change in its business model—departing from the model that has become an industry standard of charging a commission for at least some in-app purchases—it would almost certainly find it optimal to change other elements of its business model, to the benefit of some consumers and developers and to the detriment of others. Schmalensee TT. As detailed above, Apple's current iOS business model has worked well for consumers and developers, as growth on both sides of the platform makes

clear. Schmalensee TT; *see also supra* § VIII. There is certainly no guarantee that an alternative model compelled by judicial decree would be any better. Schmalensee TT.

703. Alternative payment solutions also could put customer security at risk. Schmalensee TT. As discussed above, IAP has been designed with robust security features. *See supra* § III & IV.C. "[W]hen you use in-app purchase, you're using services that are built in on the phone versus a third-party library that may or may not have malware in it. . . . People can use infected libraries to give you third-party functionality. And then your password and user name are out there." Shoemaker depo. at 149:21–150:2.

704. In part because fraud detection techniques become more effective when there is more data to operate with, IAP's widespread use within the Apple ecosystem has made its security protections particularly sophisticated. Rubin TT. Alternative payment solutions would deprive consumers of that benefit as no individual payment solution would have the same pool of data from which it could improve its security features. Rubin TT. Eliminating IAP would be like going in a store and paying for each individual item separately with a different payment and constantly providing your credit card. Cook TT.

705. In addition, it is "a huge undertaking to build" a system akin to IAP—as Epic realized when creating EGS. DX-4497 at -170. Apple had the resources to build such a system and to continually invest in its improvement. Schiller TT. Creating an industry-leading service to further enhance the appeal and useability of the App Store was consistent with Apple's values. Schiller TT. Making IAP secure, private, and reliable was also in Apple's interest: Apple has a recognized brand for services that are secure, private, and reliable, Cook TT; Evans TT, and reducing frictions were in Apple's interst as the operator of the App Store platform, Schiller TT; Schmalensee TT.

706. Developers and payment processing services may not share those values or priorities, nor may many of them have the resources to invest in similarly robust protections to those Apple has created with IAP. Schmalensee TT. Thus, alternative payment solutions may not invest in the same security mechanisms—such as the manner in which Apple maintains consumers' payment methods and payment details in a [redacted] where even Apple employees do not have access to them—and because of their technical nature, many consumers may not understand the security risks they would take on by using alternative payment systems. Rubin TT; Schmalensee TT.

707. Epic's proposal would also undermine Apple's customer-first principle. Schiller TT. Apple thinks holistically about the consumer experience and promote consistency across Apple devices. Schiller TT. Epic's proposed relief would create a fractured environment, forcing consumers to use potentially dozens of different payment processors across various apps and devices instead of IAP—a single, secure solution in which consumers' have learned to trust. Rubin TT.

PROPOSED CONCLUSIONS OF LAW

I. INTRODUCTION[1]

1. The Court observed at the preliminary injunction stage that Epic's claims are "at the frontier edges of antitrust law." Dkt. 118 at 10. The corollary to that observation is that in the heartland of antitrust law—as interpreted and applied by the Supreme Court and the Ninth Circuit—Epic's claims are without merit.

2. Apple launched the iPhone in 2007, the App Store in 2008, and IAP in 2009. These were (and remain) revolutionary advancements in hardware and software innovation and integration, making possible the "smartphones" that are ubiquitous today but were unknown at the turn of this century. All of these features are genuine improvements that offer procompetitive benefits to developers and consumers in the form of increased security, privacy, and reliability, a more user-friendly experience, and differentiation from competitors. Apple obviously had no monopoly at the outset, and nothing that has transpired in the intervening decade changes that reality. To the contrary, Apple is subject to fierce competition in all of its business lines, and new competitors have emerged even during the pendency of this case.

3. In the product market relevant to Epic's claims (digital game transactions), the App Store competes with transaction platforms available on other smartphones, other tablets, other mobile gaming devices, game consoles, and PCs. A nascent group of game streaming services is also attempting to disrupt the game app industry. Apple has no monopoly (or market) power, has undertaken no exclusionary conduct, has engaged in no concerted activity, and has inflicted no anticompetitive effects. On the contrary, there has been an explosive increase in the output of apps (including digital game transactions) without any increase in price. Indeed, Apple's commission is competitive with that charged by all other digital game transaction platforms, and reductions in the App Store's commission rates over time are inconsistent with the exercise of market power. In addition, the App Store offers numerous procompetitive benefits to developers and consumers, including unrivaled reliability, functionality, security, and privacy. Epic, in particular, has greatly benefited from Apple's innovative products and services, including access to Apple's proprietary software and other intellectual property.

4. Resolution of the case in Apple's favor depends simply on a straightforward application of settled law to the facts to be established at trial, whereas each of Epic's liability theories would require this Court to depart from established principles of antitrust law:

[1] Apple respectfully sets forth below the conclusions of law that the Court can and should adopt in ruling that each and every one of Epic's causes of action (and, if necessary, requested remedies) fails as a matter of law or equity in light of the record that will be laid by the end of trial. The organization generally follows the parties' Joint Submission Regarding Trial Elements, Legal Framework, and Remedies, Dkt. 276 ("Joint Elements Submission"), to which cross-references are included for convenience.

(a) Epic's monopoly maintenance claim is premised on the notion that the antitrust laws preclude Apple from imposing conditions on the licensed use of its intellectual property, and impose on Apple a duty to deal with Epic on the terms preferred by Epic—to the detriment of other developers and consumers alike. But Apple has no obligation to license its intellectual property, and aside from a limited exception not applicable here, businesses are free to choose the parties with whom they will deal, as well as the prices, terms and conditions of that dealing.

(b) Epic's essential facility claim relies on a theory of liability—denial of essential facility—that has never even been recognized by the Supreme Court. And even to the extent some courts have entertained such a claim, they have done so only with respect to preexisting, fixed bottlenecks, such as power grids and bridges, not a firm's proprietary intellectual property developed through years of innovation. Epic's essential facility claim asks the Court to be the first to hold that Section 2 requires innovating firms to make their innovations available to competitors on whatever terms competitors demand.

(c) Epic's tying claim under Section 1 asks the Court to view the functionalities of the App Store separately, rather than as an integrated whole. Moreover, there is not even a tie here, because there is no requirement that Epic use IAP (the alleged tied product) in order to access Apple's distribution services (the alleged tying product). If accepted, the longstanding limitations on tying liability—an already dubious and deteriorating theory of antitrust liability—would evaporate.

(d) Epic's claim for concerted action under Section 1 urges the Court to hold Apple liable for concerted restraint in violation of the antitrust laws—the most suspect kind of conduct under the Sherman Act—even though there is *no concerted action alleged*. Epic would transform every unilateral course of dealing that includes a purchase contract, terms and conditions, or even an invoice into a conspiratorial restraint of competition. There is no basis in law for such an expansion of the meaning of concerted action.

5. The antitrust laws "were enacted for the protection of competition, not competitors." *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 767 n.14 (1984) (quotation marks omitted). Far from protecting competition, Epic's calculated media and legal "Project Liberty" campaign—including its surreptitious implementation of an undisclosed "hotfix" to intentionally and knowingly deprive Apple of revenue that Epic agreed to pay—arises out of its disagreement with the terms of a license agreement with Apple. At bottom, Epic is asking this Court to force alternative terms on Apple so that Epic can make more money. But Epic's request would harm other developers and consumers, in addition to imposing unprecedented obligations on Apple to open its proprietary systems and engineering to third parties.

6. Apple is among the most innovative, competitive, dynamic, and creative companies in the United States, and millions of people benefit from its products and services. Those products and services are the result of billions of dollars of investment, in addition to substantial time and thought, and represent Apple's intellectual property. Apple licenses that property—including access to iOS, development tools, and other proprietary resources—to Epic and other game developers on transparent terms. Those terms are

calibrated to protect the security, privacy, and reliability of iOS devices and their users, and do not violate the federal or state antitrust laws.

II. MARKET DEFINITION (ALL EPIC COUNTS)[2]

A. General Principles

7. A "threshold step in any antitrust case" is to define the relevant market. *FTC v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020) (citing *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285 (2018)). "[C]ourts usually cannot properly apply the rule of reason without an accurate definition of the relevant market. Without a definition of the market there is no way to measure the defendant's ability to lessen or destroy competition." *Amex*, 138 S. Ct. at 2285 (quotation marks, alterations, and footnote omitted).

8. Generally speaking, "[t]he relevant market is the field in which meaningful competition is said to exist." *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997). A "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).

9. It is the *plaintiff*'s burden to establish the relevant product and geographic markets. *See Thurman Indus., Inc. v. Pay 'N Pak Stores, Inc.*, 875 F.2d 1369, 1373 (9th Cir. 1989); *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." 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 533c (4th ed. 2020 supp.); *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 introduced adequate regarding "the products involved as to price, use, quality, and characteristics"); *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 64 (D.D.C. 2011) ("Courts correctly search for a relevant market—that is a market relevant to the particular legal issue being litigated." (alteration and quotation marks omitted)).

10. The relevant *product* market "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* 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 530c (4th ed. 2020 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 v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018) (quoting *Newcal*, 513 F.3d at 1045).

11. For products to be economic substitutes, they must be "reasonably interchangeable by consumers for the same purpose." *United States v. E.I. du Pont de Nemours & Co.*, 351

[2] Market definition is addressed in § 4, pages 8–21 of the Joint Elements Submission.

U.S. 377, 395 (1956). "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) (quotation marks omitted). For example, "[a] person needing transportation to work could buy a Ford or Chevrolet automobile, or could elect to ride a horse or bicycle, assuming those options were feasible." *Id.* (quotation marks omitted).

12. 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) (quotation marks omitted). The proper market "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) (quotation marks omitted).

13. The relevant market must include "the group of sellers or producers who have the actual or potential ability to deprive each other of significant levels of business." *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202 (9th Cir. 1997) (quotation marks omitted).

14. Where a defendant presents evidence of substitutability, it is the plaintiff's burden to rebut that evidence to the extent it seeks to exclude products from its proposed market, particularly where it proposes a "very narrow definition." *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296, 1302 (9th Cir. 1978); *see also Rodney v. Nw. Airlines, Inc.*, 146 F. App'x 783, 787 (6th Cir. 2005) (stating that the plaintiff "carries the burden of proving that no . . . substitutes are available" (citing *Int'l Logistics Grp. v. Chrysler Corp.*, 884 F.2d 904, 908 (6th Cir. 1989))). The plaintiff must therefore "demonstrat[e] that there are *not* appropriate economic substitutes" for the defendant's product. *Pistacchio v. Apple Inc.*, No. 20-CV-7034, 2021 WL 949422, at *2 (N.D. Cal. Mar. 11, 2021).

15. As to *geographic* markets, "[t]he criteria to be used in determining the appropriate geographic market are essentially similar to those used to determine the relevant product market." *Brown Shoe Co. v. United States*, 370 U.S. 294, 336 (1962). "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) (quotation marks and alteration omitted). "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).

B. Product Market[3]

i. The App Store Is a Two-Sided Transaction Platform

16. The determination of the relevant product market takes on additional complexity when dealing with two-sided platforms. *See generally Ohio v. Am. Express Co.*, 138 S. Ct. 2274 (2018) (addressing two-sided platforms in the context of antitrust market definition). "[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." *Id.* at 2280.

17. In *Ohio v. American Express Co.*, 138 S. Ct. 2274 (2018), the plaintiffs challenged "anti-steering" provisions in Amex's contracts with merchants, which prohibited merchants from compelling or encouraging consumers to use other credit cards with lower merchant fees. *See id.* at 2282–83. The plaintiffs alleged that these provisions were anticompetitive in that they resulted in higher merchant fees. *See id.* at 2283.

18. To determine the anticompetitive effect of the challenged contractual provisions, the Court focused first on the proper market definition. The Court held that "credit-card networks are two-sided platforms." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285 (2018). Amex acted as an intermediary between two sides of the credit-card network, with consumers on one side (using Amex's cards and obtaining rewards) and merchants on the other (paying a fee to Amex but benefitting from an efficient payment solution and Amex's network of consumers). *See id.*

19. The relevant feature of two-sided platforms is that they exhibit "indirect network effects," meaning that "the value of the services" that the platform provides "increases as the number of participants on both sides of the platform increases." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018). The existence of these network effects requires that platforms "be sensitive to the prices that they charge each side," because they cannot raise prices on one side without "risking a feedback loop of declining demand." *Id.*

20. Two-sided *transaction* platforms are a subset of two-sided platforms. The distinguishing characteristic of two-sided transaction platforms is that "they cannot make a sale to one side of the platform without simultaneously making a sale to the other." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018); *see also id.* at 2298 (Breyer, J., dissenting) (noting that "there are four relevant features of [two-sided transaction platforms]: they (1) offer different products or services, (2) to different groups of customers, (3) whom the 'platform' connects, (4) in simultaneous transactions").

21. Two-sided transaction platforms exhibit "pronounced indirect networks effects and interconnected pricing and demand," and are thus "best understood as supplying only one product—transactions—which is jointly consumed by [users on both sides of the platform]." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286 & n.8 (2018). The services

[3] Product market definition is addressed in § 4.1, pages 10–20 of the Joint Elements Submission.

that the platform provides to each side of the platform "are both inputs to this single product." *Id.* at 2286 n.8.

22. The Court in *Amex* explained that credit-card networks were properly understood as a two-sided transaction platform because "no credit-card transaction can occur unless both the merchant and the cardholder simultaneously agree to use the same credit-card network." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018). Credit-card networks accordingly exhibit indirect network effects—"[a] credit card, for example, is more valuable to cardholders when more merchants accept it, and is more valuable to merchants when more cardholders use it." *Id.* at 2281.

23. The parties' economic experts agree that the App Store, like the credit-card networks in *Amex*, is a two-sided transaction platform. FOF ¶ 323.

24. Just like the credit-card networks in *Amex*, the App Store "cannot make a sale to one side of the platform without simultaneously making a sale to the other," *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280 (2018), because the App Store makes a "sale" to developers only when an app is distributed to consumers or consumers initiate a digital transaction on the app. In other words, the App Store "facilitate[s] a single, simultaneous transaction" between app developers, including game app developers, and iOS users. *Id.*; FOF ¶ 324. Those transactions are valuable for the App Store's consumers, who obtain high-quality apps or in-app products, as well as for developers, who receive revenue or obtain wider distribution of their products. FOF ¶ 326.

25. The App Store also exhibits the "pronounced indirect networks effects" that *Amex* held are common to all two-sided transaction platforms—as more developers offer their apps through the App Store, the platform becomes more valuable to consumers, and vice versa. FOF ¶ 328. These indirect network effects are evident from Apple's business model: Apple invests substantial resources to provide support to developers, including game app developers, to attract and retain them on the App Store ecosystem, while also ensuring that consumers remain satisfied by implementing processes to keep the apps on the App Store curated, secure, and safe. FOF ¶¶ 330, 334. And the App Store is characterized by interconnected pricing and demand, another feature of two-sided platforms. FOF ¶ 507.

26. Moreover, Apple is "sensitive to the prices that [it] charge[s] each side" of the App Store, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018), and encourages participation on the consumer side of the platform by making their use of the App Store free. Apple directly earns revenue through the App Store only from the developer side of the platform. Developers are free to select their own monetization strategy and pay Apple a commission only for particular transactions that are defined in advance. FOF ¶¶ 48.3–48.5; *cf. Amex*, 138 S. Ct. at 2288 (explaining that credit-card networks offer rewards to consumers and charge fees to merchants); *US Airways, Inc. v. Sabre Holdings Corp.*, 938 F.3d 43, 56–57 (2d Cir. 2019) (explaining that travel-booking platforms pay travel agents for each booking and collect booking fees from airlines).

27. The Court previously observed that market definition in this case turns in part on "the question of perspective," and that "there are at least three possible perspectives on the

relevant market: (1) the consumer who purchases the apps or games, (2) the developer who makes the apps or games, and (3) the competing app store or digital marketplace that distributes the apps or games." Dkt. 118 at 20.

28. The question of perspective is informed by the Supreme Court's instruction that competition on two-sided transaction platforms "cannot be accurately assessed by looking at only one side of the platform in isolation." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). "[A]s a matter of law," therefore, "in a case brought under the Sherman Act that involves a 'two-sided *transaction* platform,' the relevant market must *always* include both sides of the platform." *US Airways, Inc. v. Sabre Holdings Corp.*, 938 F.3d 43, 56–57 (2d Cir. 2019); *see Am. Express*, 138 S. Ct. at 2280–87, 2298 (stating that "in two-sided transaction markets, only one market should be defined," even where the platform offers "different products or services to two different groups who both depend on the platform to intermediate between them" (quotation marks and alteration omitted)).

29. The perspective of a competing app store or digital marketplace may be helpful, in some contexts, to determine market definition. FOF ¶ 381. The fact that platforms monitor the business of their competitors suggests that those platforms understand that consumers see those competitors as substitutes. *Id.*

30. Accordingly, because the App Store is a two-sided transaction platform, in order to determine the scope of the relevant product market within which the App Store operates—that is, the kind of transactions relevant to this case—the Court must consider the perspectives of consumers and developers. This necessarily follows from *Amex*'s holding that "[e]valuating both sides of a two-sided transaction platform is . . . necessary to accurately assess competition." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018).

ii. The Relevant Product Market Is Digital Game Transactions

31. In its complaint, Epic has alleged two purportedly distinct product markets—the distribution of iOS apps and payment processing for iOS apps. Dkt. 1 ¶¶ 7, 10. As discussed below, these are not appropriate product markets as a matter of fact or law. There is only one relevant product market applicable to the claims asserted by Epic in this lawsuit: digital game transactions between game app developers and consumers of game app content ("digital game transactions," in brief). FOF ¶ 342.

32. Because the App Store is a two-sided transaction platform, the relevant market "must . . . include both sides of the platform." *US Airways, Inc. v. Sabre Holdings Corp.*, 938 F.3d 43, 56–57 (2d Cir. 2019). That means that the relevant product for Epic's antitrust claims, and the product that must be evaluated for substitutability, is *transactions* through the App Store—not iOS devices or the App Store itself. And the product market must be tailored to Epic's claims in this case. *See Moore v. James H. Matthews & Co.*, 550 F.2d 1207, 1218 (9th Cir. 1977). This framework imposes two important considerations for the relevant market: (1) the market must encompass platforms other than the App Store, and (2) the market must be focused on digital transactions for games, not other types of apps.

33. As set forth below, Epic ignores these considerations in proposing a product market that fails to take into account substitutability by consumers and developers. A product market definition that focuses solely on iOS is under-inclusive because it fails to account for the multiple platforms through which consumers play and developers make available digital game transactions. And a product market definition that focuses on all digital transactions—without regard to subject matter or purpose—is over-inclusive because not all digital transactions are substitutable for one another. For example, a download of a yoga app is not a reasonable substitute for a purchase of in-game content on *Candy Crush Saga*. The relevant product market thus is digital game transactions across all competing platforms.

b. The Relevant Market Includes All Digital Transaction Platforms, Not Just iOS

34. The relevant market in this case must include digital transactions on other platforms, not just iOS.

35. The relevant market must include "all sellers or producers who have actual or potential ability to deprive each other of significant levels of business." *Thurman Indus., Inc. v. Pay 'N Pak Stores, Inc.*, 875 F.2d 1369, 1374 (9th Cir. 1989). Identifying such sellers or producers is critical, because "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) (quotation marks omitted).

36. In defining the relevant product market, the relevant inquiry is whether digital transactions on other platforms provide alternatives to the App Store, not whether consumers or developers prefer one platform over another. Courts have accordingly rejected product market definitions as unduly narrow where they are based on a particular mode of distributing a product. *See, e.g.*, *Thurman Indus., Inc. v. Pay 'N Pak Stores, Inc.*, 875 F.2d 1369, 1377 (9th Cir. 1989) (rejecting argument that goods and services sold at "home centers" comprise a separate product market because there was no evidence that "consumers are unwilling to patronize a variety of retailers other than home sellers" in satisfying their home improvement purchase needs); *Westman Comm'n Co. v. Hobart Int'l, Inc.*, 769 F.2d 1216, 1220–21 (10th Cir. 1986) ("[T]he fact that 'one-stop distribution' is an effective way or even superior way to compete does not mean that the relevant market is limited to those who use that method of competition."). Thus, "the mere preference for one form of delivery over another does not create separate markets for the same product delivered one way as opposed to another." *PepsiCo, Inc. v. Coca-Cola Co.*, 114 F. Supp. 2d 243, 250 (S.D.N.Y. 2000).

37. A product market that focuses solely on iOS without considering these other platforms is under-inclusive because it does not include all digital game transactions that are reasonably interchangeable to consumers and developers. *See, e.g.*, *Big Bear Lodging Ass'n v. Snow Summit, Inc.*, 182 F.3d 1096, 1105 (9th Cir. 1999) (dismissing antitrust claim where the plaintiff failed to allege "there are no other goods or services that are reasonably interchangeable"); *Spindler v. Johnson & Johnson Corp.*, No. 10-CV-1414, 2011 WL

12557884, at *2 (N.D. Cal. Aug. 1, 2011) (the product market "must encompass the product at issue well as all economic substitutes for the product").

38. Developers offer their apps and the associated in-game content across multiple transaction platforms, and consumers execute digital game transactions across multiple platforms, expanding the "area of effective competition" far beyond simply iOS. FOF ¶¶ 351–76. Apple thus faces competition from the numerous alternative means of facilitating game transactions, all of which must be considered in defining the scope of the product market. This competition is apparent from both the consumer perspective and the developer perspective.

39. *First*, from the consumer perspective, the App Store competes with other game transaction platforms. Most modern smartphone users have access to a variety of different devices, such as laptops, desktop computers, tablets, smart TVs, and game consoles. FOF ¶¶ 358–62. These devices can each be used to access apps, and as particularly relevant here, to access game apps and engage in digital game transactions. FOF ¶ 363.

40. Indeed, consumers can choose which devices to use for playing games and making game app purchases depending on the situation. While an iPhone user is waiting for the bus in the morning, for example, she might decide to play a session of *Fortnite* on her phone for a few minutes. Or she might instead use a mobile gaming device (such as the Nintendo Switch) or a non-iOS tablet for the same purpose. That same iPhone user, arriving home at night, might choose to play *Fortnite* or *Halo* on a game console or PC—or she might purchase a new game altogether. She might choose instead to play *World of Warcraft* on her PC or buy some in-game currency. Or she might purchase some levels in *Candy Crush Saga* and play them on her iPhone. In all circumstances, Apple and the App Store have to compete with other game app platforms for consumer time and purchases.

41. A survey conducted by one of Apple's experts revealed that many consumers of game apps do in fact own multiple devices and have access to multiple game platforms that are reasonably interchangeable. For instance, 81% of App Store users regularly use a device besides their iOS device, and 41% of them regularly use a game console or handheld game device. FOF ¶ 361. The same survey showed that, with respect to consumers who used iOS to play *Fortnite*, 94% regularly used or could have used game consoles or handheld game devices in the last twelve months. FOF ¶ 365. Epic's user data demonstrates a similar point: between March 2018 and July 2020, 35.9% of users who played *Fortnite* on iOS devices also played *Fortnite* on another device. FOF ¶ 367.

42. Consumers do not just have *access* to multiple devices; they actually *transact* across those devices and platforms. For instance, consumers can and do access the popular game *Minecraft* on a variety of platforms, purchasing content on these disparate platforms. In 2020, 22.5% of Minecraft purchases were on Android devices, 22.9% were on iOS, and the remainder were split among PC, consoles, and web versions of the game. FOF ¶ 363. Consumers also engage in *Fortnite* transactions across a number of platforms, with the PlayStation 4 generating 46.8% of total *Fortnite* revenues from March 2018 through July 2020 and Xbox One generating the second-highest share of revenues at 27.5%. FOF ¶ 369.

iOS ranked *fifth* among all *Fortnite*-accessible platforms in terms of revenue, with just 7.0% of total revenue. *Id.*

43. The launch of *Fortnite* on the Nintendo Switch in June 2018 provides an illustrative case study of how consumers readily substitute between game transaction platforms. Apple's expert, Professor Hitt, analyzed the dataset of consumers who, in June 2018, accessed *Fortnite* on both iOS and Nintendo Switch, and found that after the Nintendo Switch was introduced in June 2018, there was significant decrease in the percentage of time these consumers spent playing *Fortnite* on iOS, as well as a significant percentage decrease in the revenue generated by these consumers through purchases made on iOS. FOF ¶¶ 373–74. These data demonstrate that consumers view the various game app platforms as substitutable, switching the platform through which they make purchases as new entrants join the market.

44. More recently, consumers are beginning to have new alternatives for digital transactions for game apps that do not even require access to a second device. Several online, cloud-based streaming game platforms have begun to emerge, including Google Stadia, Nvidia GeForce Now, PlayStation Now, Microsoft Xbox Cloud Gaming, and Amazon's Luna. FOF ¶¶ 245–245.5. These platforms are accessible through a web browser (including, for example, Safari) and allow consumers to play games directly on the platform rather than downloading the game to a particular device. *Id.* *Fortnite* is expected to soon be available on Nvidia GeForce Now for iOS users, thus giving iOS users an alternative way to play *Fortnite* that does not require a second device. FOF ¶ 350.

45. It bears emphasis that the alternative of playing games through the Safari web browser has *always* been available to consumers. When the iPhone was first launched, Apple emphasized to developers that they could create web apps for consumers. FOF ¶¶ 28–28.4. Even today, Apple's agreements remind developers that "there is always the open Internet." FOF ¶ 529.2. Thus, no game app developer *must* go through the App Store in order to distribute game apps to iOS users, because all developers are free to offer their games as web apps, accessible through the Safari web browser.

46. *Second*, from the developer perspective, there also is robust competition with the App Store. Developers, similar to consumers, can choose to use many different platforms on many types of devices to distribute their apps. FOF ¶ 352. A large share of iOS developers, for instance, also create games for Google Play, and of the top 100 game apps by estimated revenue, *ninety-nine* appear on both platforms. *Id.* Game app developers also regularly distribute their apps through the Microsoft Store, Amazon App Store, Nintendo eShop, and PlayStation Store, or even through their own websites. FOF ¶ 353.

47. One reason for this developer cross-pollination is that developing games for a broad set of platforms has been made substantially easier by new technologies and evolving game developer tools. FOF ¶ 354. Epic itself distributes *Fortnite* on all the major game app platforms and apparently views the platforms as substitutable, because it has encouraged users who could no longer play on iOS following *Fortnite*'s removal from the App Store to play on other platforms. FOF ¶¶ 355–355.4. Epic has even benefited from the

competition among game app platforms by, for example, obtaining marketing support from Apple that had benefits for its other platforms. FOF ¶ 356.

48. Competition for developers across platforms is evidenced by the fact that the highest commission rate Apple charges—30%—for digital game transactions matches the commission charged by the other major game app platforms. FOF ¶ 472. And, like Apple, many of the other platforms also offer discounts for subscriptions or small businesses, as Apple does. FOF ¶ 474. Google, for example, recently announced that it will charge a 15% commission for the first $1 million in revenue that a developer makes, a similar policy to the one Apple adopted just months ago. FOF ¶ 166. Google's near-replication of a discount offered by Apple is clear evidence of competition for developers. Although Epic points to some small market outliers in an attempt to show that a 30% commission is supracompetitive, there is no serious question that the major platform operators who provide access to the largest number of consumers generally charge a base 30% commission (which Apple, in certain circumstances, reduces to 15%).

49. This cross-platform competition is apparent from the fact that *Fortnite* was successful long before it ever launched on iOS. FOF ¶ 355.1. And even as *Fortnite* continues to earn Epic billions of dollars each year, purchases on iOS comprise only a small fraction of the total amount of revenue *Fortnite* brings in—Epic is able to reach the majority of its existing customer base through platforms other than the App Store. FOF ¶ 369. Even after its removal from the App Store, *Fortnite* still offers a highly profitable revenue stream for Epic. FOF ¶ 517.2. Thus, even as it claims in this lawsuit that the App Store constitutes its own discrete market, Epic has long treated the App Store as but one of several alternative means through which users can download *Fortnite* and play with their friends across a multitude of platforms.

50. Developers can and do make decisions about which platform(s) to distribute their apps through and are sensitive to factors such as the commission rate on the platform, the technical capabilities of the device(s) on which a platform is available, the available developer tools, the number of consumers on the platform, the amount consumers on that platform are expected to spend, and other services offered by the platform. And even if developers do not move entirely away from a platform based on these factors, they may allocate marketing and game development efforts across platforms differently based on these factors. Indeed, Epic has done just that, focusing first on its *Fortnite* iOS launch before devoting resources to the launch of *Fortnite* on Android. FOF ¶ 382.

51. Epic's implementation of Project Liberty demonstrates the competition for developers. Epic executed Project Liberty knowing that it would likely lead to *Fortnite*'s removal from the App Store, and Epic's co-founder has acknowledged as much in this litigation. FOF ¶ 294. Yet Epic went forward anyway, despite the fact that nothing would have stopped it from bringing this lawsuit while remaining in compliance with the DPLA and keeping *Fortnite* on the App Store. And after *Fortnite* was removed from the App Store (as Epic knew it would be), Epic ran advertisements explaining that iOS *Fortnite* players could move to other platforms to continue playing the latest version of *Fortnite*. FOF ¶ 304. Epic's own conduct thus demonstrates that it views iOS as interchangeable with other

platforms—it would rather not be on the App Store at all and earn no revenue, than be on the App Store and pay Apple a 30% commission.

52. Moreover, many developers—including Epic—specifically develop their games to be compatible across platforms and enable cross-platform play. FOF ¶¶ 165.1, 249.2. That means that a player who downloads a game like *Fortnite* on his iPhone and creates an account can also play using that same account (and all of the features purchased or unlocked for that account) on any other platform to which he has access. FOF ¶¶ 249.2, 255.1. Thus, if a user has already downloaded a game on his iPhone, Apple still must compete with other platforms in terms of persuading that consumer to use the App Store—as opposed to the numerous other game app platforms—to make purchases that will enhance the user's playing experience across all platforms. This competition is effective in part because, as noted above, most iOS users already have access to other devices. FOF ¶ 358.

53. Epic has maximized this cross-elasticity through the concept of a "cross-wallet." FOF ¶¶ 367–415. Not only can *Fortnite* players use the features and upgrades they purchase on one platform for play on other platforms too, but they also can purchase Epic's "currency"—V-Bucks—on one platform and use them on another. FOF ¶ 367. And in fact, an iOS *Fortnite* player does not even have to have access to anything other than an iPhone to utilize this cross-wallet feature—the player can navigate to EGS on Safari and purchase V-Bucks directly from Epic, then use those V-Bucks on his iOS *Fortnite* game to buy in-game features and upgrades without ever transacting through Apple. *Id.*

54. *Third*, the perspective of market participants also supports this market definition. Apple views the App Store as competing directly with other game transaction platforms—like Google Play, the Nintendo eShop, and Steam—for both consumers and developers. FOF ¶¶ 379–80. For instance, a 2017 Apple presentation identified Google Play as a competitor. FOF ¶ 238. And in 2009, Apple executives discussed the PSP Go (a mobile console) as a "key competitor" to the iPhone. FOF ¶ 240. This focus is reflective of the fact that consumers see the App Store as reasonably interchangeable with other transaction platforms.

55. Once Apple introduces evidence of interchangeability—as it has done here—it is Epic's burden to "rebut" that showing with evidence demonstrating that the products are not interchangeable. *Fount-Wip, Inc. v. Reddi-Wip, Inc.*, 568 F.2d 1296, 1302 (9th Cir. 1978); *see also United States v. Sabre*, 452 F. Supp. 3d 97, 142 (D. Del. 2020) (noting that where the defendant has introduced evidence that a product should be part of the relevant market, "the burden is on the [plaintiff] to show that [that product] is *not* part of the relevant . . . market" (emphasis added)).

56. That is because market definition is an element of Epic's claims, and as a matter of law, the relevant product market "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 Pistacchio v. Apple Inc.*, No. 20-CV-7034, 2021 WL 949422, at *1 (N.D. Cal. Mar. 11, 2021) (same). "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 v. PGA Tour, Inc.*, 897 F.3d 1109, 1120 (9th Cir. 2018) (quotation marks omitted).

57. Where a "plaintiff fails to define its proposed relevant market with reference to the rule of reasonable interchangeability and cross-elasticity of demand . . . the relevant market is legally insufficient." *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 436 (3d Cir. 1997).

58. If Epic cannot rebut the evidence showing that other transaction platforms are reasonably interchangeable with the App Store, then any market definition in this case that excludes those platforms is "legally insufficient." *Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 436 (3d Cir. 1997). Indeed, this Court has recently recognized in a related antitrust suit against Apple that a plaintiff's claim must fail if it has not demonstrated "that there are *not* appropriate economic substitutes." *Pistacchio v. Apple Inc.*, No. 20-CV-7034-YGR, ECF No. 61, at 3 (N.D. Cal. Mar. 11, 2021).

59. Epic has not rebutted the evidence showing that transactions executed on other platforms are reasonably interchangeable with those executed on the App Store. The fact there are minor differences between various platforms—for example, some are for mobile use, and some allow for higher graphics quality—is not sufficient to rebut the substantial evidence of interchangeability of transactions among those platforms. Some platforms—Android app stores, non-iOS tablets, and the Nintendo eShop for the Nintendo Switch—are for mobile use and thus transactions executed on those platforms are clearly interchangeable with those on the App Store. Other platforms—non-portable game consoles and PCs, including Macs—do not offer transactions for execution on mobile devices but offer other advantages to consumers, and thus transactions executed on those platforms also are economic substitutes for digital game transactions on iOS. And the new online game streaming services described above promise to provide additional substitutes, including for iOS users.

60. Minor differentials in price or latency, or an additional step to access (such as having to subscribe to a service) does not mean a product is not interchangeable. Even "significant price differences do not always indicate distinct markets." *AD/SAT, Div. of Skylight, Inc. v. Associated Press*, 181 F.3d 216, 228 (2d Cir. 1999); *see also Allen-Myland, Inc. v. Int'l Bus. Machs. Corp.*, 33 F.3d 194, 206 (3d Cir. 1994) ("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."); 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 562c (4th ed. 2020 supp.) ("Products can be near-perfect substitutes even when their prices or qualities differ."). There is no evidence here of an even a moderate price difference, left along a significant one, among the numerous alternative platforms for digital game transactions.

61. Far from showing an absence of interchangeability, the evidence demonstrates that competition is working precisely as economic principles anticipate. Apple removed *Fortnite* from the App Store in August 2020 because of Epic's willful breach. FOF ¶ 301. By the time trial in this case begins, Nvidia GeForce Now expects to make *Fortnite*

available to all iOS users *on their iOS* devices via its online game streaming service. FOF ¶ 350. In just a few months, the market has already reacted to the removal of *Fortnite* from the App Store and developed an alternative, confirming that the market, and not the judiciary, is the best mechanism to provide consumers alternatives to the App Store.

62. That web apps may be less convenient in some respects or that some consumers might prefer to play games on a portable device rather than on a PC is irrelevant. "[W]here there are market alternatives that buyers may readily use for their purposes, illegal monopoly does not exist merely because the product said to be monopolized differs from others. If it were not so, only physically identical products would be a part of the market." *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 394 (1956). What matters is whether consumers have alternatives to the narrower product market the plaintiff seeks to define, and the undisputed evidence here shows that they do. Epic has failed to "carr[y] the burden of proving that no . . . substitutes are available." *Rodney v. Nw. Airlines, Inc.*, 146 F. App'x 783, 787 (6th Cir. 2005).

63. Accordingly, the product market here extends to all transaction platforms that facilitate digital transactions between developers and consumers of game apps.

c. The Relevant Market Is Limited to Digital Transactions for Games

64. The product market must be defined as *game* transactions, not all app transactions.

65. "The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Where products are not interchangeable, they are not part of the same product market. *See, e.g.*, *Golden Gate Pharmacy Servs., Inc. v. Pfizer*, 433 F. App'x 598, 599 (9th Cir. 2011) (holding that the "pharmaceutical industry" was not a relevant product market because there were no fact alleged showing that all pharmaceutical products were interchangeable).

66. The principal complaint by the sole plaintiff in this lawsuit (Epic Games, Inc.) is *its* purported inability to reach iOS users with its products, i.e., *Fortnite* and other game apps, and the relevant market thus is appropriately defined is digital transactions for game apps. Epic is a developer of game apps, FOF ¶ 248, and the antitrust claims it asserts focus almost exclusively on *Fortnite* (a game), Dkt. 1 ¶ 16, and the Epic Games Store, described by Epic as "a digital video game storefront through which gamers can download various games, some developed by Epic, and many offered by third-party game developers," *id.* ¶ 27. The outer boundaries of the product market in this case are clear, and stop at the edges of the game app transaction market. There is no evidence that digital transactions in game apps are interchangeable with digital transactions in non-game apps. FOF ¶¶ 343–50. To the contrary, game apps are a discrete subset of the wide variety of apps offered by Apple through the App Store, and they generally are not substitutable with other apps.

67. From the consumer perspective, transactions in game apps are interchangeable with other digital game transactions, but not with (for example) transactions in weather or news apps. FOF ¶ 345. Game apps are even segregated on platforms like the App Store from other

apps, usually in a standalone "Games" tab, to cater to consumers who are interested in using the App Store for games. FOF ¶¶ 344.1–344.3. Moreover, there are specialized marketplaces for games and game transactions, some of which reside on special devices. FOF ¶ 349. Some platforms—like the Sony PlayStation and its PlayStation Store, or Valve and Steam for desktops/laptops—focus exclusively on games and game transactions. FOF ¶¶ 349–349.3. A consumer dissatisfied with his experience on the App Store thus can turn to these other platforms to seek out an alternative digital-transaction experience for game apps, but cannot use those same alternatives for other types of apps. Accordingly, digital game transactions have "characteristics peculiar to [them] rendering [them] generally noncompetitive" with other app transactions. *Brown Shoe Co. v. United States*, 370 U.S. 294, 326 (1962).

68. From the developer perspective, developers that develop game apps, including Epic itself, tend to specialize in the development of game apps, not apps in general. FOF ¶ 347. Developers that develop game apps for the App Store derive over 88% of their revenue from the App Store from game apps that they distribute, meaning that less than 12% of their revenue comes from other, non-game apps. *Id.* At the same time, non-game apps may be subject to other new technologies, such as wearable devices (e.g., Fitbit), that may not affect game apps. FOF ¶ 350.

69. Epic's expert incorrectly contends that Apple has focused exclusively on the fact that the plaintiff here, Epic, is in the business of game apps as the basis for Apple's definition of the market. In fact, Apple has *not* centered its market definition on Epic. Rather, Apple has analyzed the interchangeability of digital game transactions with transactions for other types of apps, and analyzed the relevant market characteristics. Epic ignores the many reasons why digital game transactions on iOS are economically interchangeable with other digital game transactions, but not with transactions for other apps, all detailed above.

70. In any event, market definition must be tailored to the legal claims raised by the plaintiff. *See* 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 533c (4th ed. 2020 supp.) (a market must be "relevant to the particular legal issue being litigated"). In *Amex*, for example, the relevant market was the two-sided market for credit-card transactions, because the plaintiffs alleged that Amex had unreasonably restrained trade *in that market* to better compete against other credit card companies. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). But of course credit card companies also compete with banks that issue credit cards—credit card companies want their consumers to purchase goods and services on credit rather than through a bank-issued debit card, and have to therefore offer competitive incentives to encourage consumers to do so. In a different case, thus, the relevant market might be defined more broadly. *See also* 5C Areeda & Hovenkamp, *supra*, ¶ 533c (explaining that various markets "may be relevant to the consideration of *some* antitrust violation, but the court must choose one or the other judge" the case at hand).

71. It is legally irrelevant to market definition that Epic's affiliates offer products and services other than game apps (or a game app store). For example, Epic Games International S.à.r.l. ("Epic International") produces Unreal Engine, a graphics engine that Epic International licenses to other developers for use in creating games, videos, and animations. FOF ¶ 250.

But Epic International is not a plaintiff in this lawsuit, and therefore its products (and the markets in which they compete) are irrelevant. Moreover, Unreal Engine is not an app of *any* kind, and Epic has never sought to distribute it to iOS users through the App Store or otherwise. It is a software tool that developers use (and pay Epic International a license fee for using) to develop their own products. *Id.*; *see also infra* § III.D.i (¶¶ 544–53).

72. A different plaintiff facing a different type of competitive injury may very well (appropriately) allege a different type of market. And a government plaintiff may proceed under a broader market in an effort to combat *all* alleged anticompetitive effects, or may offer several alternative markets. But Epic's claims—the only claims at issue in this suit—are focused on the competitive injury to Epic and its consumers, and what Epic complains about is the allegedly anticompetitive effects of Apple's conduct on its ability to distribute its *games* (in particular, *Fortnite*) to iOS users, and its ability to execute digital transactions for those users.

73. Epic's contention that this approach is unworkable and arbitrary is incorrect—Epic brings this suit in its own capacity, not as part of a class action (which it opted out of) or as a representative of the public interest. Epic can thus assert only harm accruing to *it*, not to the market participants. Epic "lack[s] standing to seek—and the district court therefore lacks authority to grant—relief that benefits third parties." *McKenzie v. City of Chicago*, 118 F.3d 552, 555 (7th Cir. 1997). If there is competition with respect to the market in which Epic operates (i.e., digital game transactions), then Epic has suffered no antitrust injury—whether or not there is a lack of competition in some other market.

d. Epic Has Failed to Prove a Single Market for "iOS App Distribution"

74. Epic's proposed market definition of a single market for "iOS App Distribution" rests on the counterfactual that game and non-game digital transactions face similar competitive conditions.

75. The technical term for what Epic attempting to do is "clustering," in which two distinct product markets facing similar "competitive conditions" may be analyzed together as a matter of "administrative convenience." *ProMedica Health Sys., Inc. v. FTC*, 749 F.3d 559, 565–66 (6th Cir. 2014) (quotation marks omitted). "The rationale for clustering nonsubstitutable goods into a single market must be regarded as a severe exception to ordinary market definition criteria, which define markets in terms of substitutability." 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 565c (4th ed. 2020 supp.)

76. Epic's expert, Dr. Evans, has disclaimed any attempt to define a cluster marketNor could Epic establish that digital game transactions and other types of digital transactions should be "clustered" for analytical purposes. *See generally*, Herbert Hovenkamp, *Digital Cluster Markets* (Working Paper 2021), https://ssrn.com/abstract=3820062.

77. The "critical question that must be answered when determining whether a particular product should be included in a cluster market" is: 'are the items subject to the same competitive conditions?" *FTC v. Staples, Inc.*, 190 F. Supp. 3d 100, 123 (D.D.C. 2016).

"Most fundamentally, goods cannot be clustered unless there is a sufficient basis for inferring that the defendant has the required degree of market power *over each of the goods in the cluster*." 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 565c (4th ed. 2020 supp.) (emphasis added). For example, in *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963), the Supreme Court held that certain commercial banking services could be clustered for analytical purposes, but only after independently analyzing each service's lack of interchangeability with comparable non-bank offering. *See id.* at 356–57. That is the standard Epic would have to satisfy in order to justify a clustered market encompassing both game and non-game digital transactions.

78. Game and non-game digital transactions cannot be clustered in the same relevant market because the competitive alternatives available to game developers and consumers who engage in digital game transactions are from those available to other app developers and consumers. As the evidence demonstrates, a consumer who wishes to execute digital game transactions can do so on many different platforms. FOF ¶¶ 358–63. And as discussed above, *see supra* § II.B.ii.b (¶ 67), games are recognized by transaction platforms as a discrete type of offering, usually listed under a separate tab. There are many differences between game and non-game transactions, explored below, that make clustering inappropriate.

79. Importantly, "[t]he rationale for clustering should . . . disappear[] as soon as it [is] clear that the defendant's market position varie[s] from item to item in the proposed cluster." 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 565c (4th ed. 2020 supp.). And here, the evidence shows more than good reason for doubting that competitive conditions for digital game transactions and other digital transactions are similar.

iii. The App Store Does Not Constitute a Single-Brand Aftermarket

80. In its Complaint, Epic proposed two variants of an iOS-only market: (1) the "iOS App Distribution Market" and the "iOS In-App Payment Processing Market." Dkt. 1 ¶¶ 51–57, 109–18. As the Court has previously recognized, "[c]ourts have expressly cautioned against such a narrowing of the relevant market definition." Dkt. 118 at 16 (citing *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 392–93 (1956)).

81. Following entry of the preliminary injunction order, Epic altered its proposed product market definition. Without seeking leave to amend its Complaint, Epic contended (through service of an expert report) that smartphone operating systems (like iOS and Android) compete in a "foremarket," and that consumers are thereafter locked into an "aftermarket" for the distribution of apps through each of those operating systems.

82. Epic did not allege in its Complaint the existence of a "foremarket" for operating systems or an "aftermarket" for app distribution services. *See generally* Dkt. 1. Indeed, neither of those terms appears anywhere in its Complaint.

83. A plaintiff's failure to plead a cognizable market is a legal defect that justifies dismissal. *See Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 436–37 (3d Cir. 1997). The Court would be justified in simply disregarding Epic's new "aftermarket" theory as improperly pled and dismissing the case for failure to plead a cognizable market. *See* 5C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 531f (4th ed. 2020 supp.) ("If an antitrust complaint requires proof of a relevant market the plaintiff must allege such a market in its complaint . . . .").

84. The "aftermarket" theory was surfaced by Epic for the first time in an expert report served (but not filed with the Court) on February 16, 2021. Expert discovery closed on March 31, 2021, and Apple filed its proposed findings of fact and conclusions of law a week later, on April 7, 2021. Apple timely objected to Epic's new "aftermarket" theory of market definition as beyond the pleadings in its Proposed Conclusions of Law. *See* Fed. R. Civ. P. 15(a).[4]

85. Epic never sought leave to amend its complaint to plead a new theory of market definition. On the contrary, Epic expressly represented to the Court that it would *not* be amending its complaint. *See* Hr'g Tr. 8:14 (Sept. 28, 2020).

86. Epic had ample time to develop its legal theories before filing its Complaint. As explained further below, Epic commenced "Project Liberty" in 2019, [redacted]. FOF ¶ 272. Epic thereafter instituted a coordinated legal, marketing, and public relations campaign culminating with the triggering of the "hotfix" in July 2020 and the filing of the Complaint in this action immediately thereafter. FOF ¶¶ 274–300.

87. In these circumstances, there is no basis for allowing Epic to amend its Complaint to include new theories of market definition. Rather, Epic must proceed to trial on the market definitions it proposed in its Complaint. As noted, there is no "aftermarket" theory pleaded in the Complaint, and Epic has failed entirely to prove the theory of market definition it *did* offer in the Complaint. All of its claims fail for that reason alone.

88. Even if the Court were inclined to allow Epic to amend its Complaint at this late date, and literally on the eve of trial, such an amendment would be futile because Epic's aftermarket theory is untenable as a matter of law, as explained below.

89. Epic attempts to fit its market definition into the facts presented in *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451 (1992), claiming there is a foremarket for iOS operating systems and an aftermarket for iOS App Distribution. But, as explained below, Epic's reliance on *Kodak* disregards the nature of the two-sided transaction platform that all parties agree is at issue here and seeks to extend the limited circumstances presented in *Kodak* in ways no court has sanctioned before.

[4] The Court directed the parties not to file motions in limine before trial. Hr'g Tr. 18:2 (Mar. 1, 2021).

90. Epic's decision to rest its entire case on a single-brand aftermarket theory amounts to an implicit concession that well-established, mainstream principles of antitrust law do not support Epic's proposed market definition. Rather, Epic must rely on exceptions upon exceptions, seeking refuge in the smallest and furthest corners of antitrust law, and pushing the boundaries of market definition far beyond what prior cases have accepted. If Epic cannot prevail on its new "aftermarket" theory, all of its claims are barred at the threshold of proving a cognizable market definition. And Epic cannot prevail on that theory.

b. There Is No Relevant or Cognizable Foremarket

91. Any foremarket for smartphone operating systems is irrelevant. Epic agrees that the App Store constitutes a two-sided transaction platform, and the Supreme Court has directed that two-sided transaction platforms must be understood as "supplying only one product—transactions." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286 n.8 (2018). The relevant question is thus not whether other devices are functionally equivalent to an iPhone (or offer an operating system functionality equivalent to that of iOS), but rather whether other platforms are reasonably interchangeable for the product at issue, that is, digital transactions for game apps. As set forth above, other platforms do act as substitutes for the App Store in the facilitation of digital transactions for game apps. Substitution of the physical device through which these platforms can be accessed is irrelevant because, as noted above, the great majority of iOS users actually have access to multiple devices that offer a variety of alternative platforms for digital transactions. FOF ¶¶ 358–63.

92. Moreover, there is no foremarket for smartphone operating systems. Apple does not sell "smartphone operating systems." FOF ¶ 393. Rather, it sells devices—like the iPhone and the iPad—that run on the proprietary iOS operating system and include many integrated features, such as the App Store. *Id.* As relevant here, there is no market in which consumers can purchase iOS for use on other devices—neither consumers nor developers pay an explicit price for operating systems, as Dr. Evans concedes. FOF ¶ 394.

93. There is vigorous competition in the market for smartphones, which is what Apple actually sells. FOF ¶ 394.2. Dr. Evans' attempt to artificially separate devices and operating systems ignores the market reality that when consumers purchase mobile devices, such as an iOS device or a Samsung device, they receive the entire bundle associated with the devices, including an operating system like iOS or Android. FOF ¶ 393.

94. Even if operating systems could constitute a foremarket, Epic's market definition is too narrow because it excludes operating systems for tablets. FOF ¶ 395. Both iPhones and iPads use the App Store to facilitate digital transactions. *Id.* Developers who want to distribute apps through the App Store can use the same tools to create apps for iPhones and iPads, and most apps on the App Store can be downloaded on either an iPhone or an iPad. *Id.* Epic's erroneous omission of tablets is significant because there are many operating systems available for tablets besides iOS and Android. FOF ¶ 242. Thus Epic's "duopoly" theory has no merit, even on its own terms.

c. iOS App Distribution Does Not Constitute a Single-Brand Aftermarket

95. Even if operating systems constituted a cognizable foremarket, Epic's single-brand aftermarket for distribution of iOS apps is legally untenable.

96. The Supreme Court has stated that "in some instances one brand of a product can constitute a separate market." *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 482 (1992). But those circumstances are exceedingly limited—"[i]n general, a manufacturer's own products do not themselves comprise a relevant product market. . . . [A] company does not violate the Sherman Act by virtue of the natural monopoly it holds over its own product." *Apple Inc. v. Psystar Corp.*, 586 F. Supp. 2d 1190, 1198 (N.D. Cal. 2008) (quotation marks omitted). Indeed, "[a] single brand is *never* a relevant market when the underlying product is fungible." 5E Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 563d (4th ed. 2020 supp.).

97. In fact, "[i]t 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); *see also Apple Inc. v. Psystar Corp.*, 586 F. Supp. 2d 1190, 1198 (N.D. Cal. 2008) ("Even where brand loyalty is intense, courts reject the argument that a single branded product constitutes a relevant market." (quotation marks omitted)); 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.").

98. Epic's economic expert contends that the skepticism of single-brand markets is irrelevant here because economists generally do not encounter the facts of this particular case. That is a false tautology. *Every* case presents unique facts, but that does not alter the *legal* principle that there is a "heavy presumption" against single-brand markets, or that plaintiffs must prove "exceptional market conditions" in order to establish a single-brand market. *In re Am. Express Anti-Steering Rules Antitrust Litig.*, 361 F. Supp. 3d 324, 343 (E.D.N.Y. 2019) (quoting *Domed Stadium Hotel, Inc. v. Holiday Inns, Inc.*, 732 F.2d 480, 488 (5th Cir. 1984)).

99. A single-brand market may be plausible in a derivative "aftermarket" in which customers were not informed about restrictive policies at the time they purchased the product from the primary market or were subject to post-purchase policy changes that limited their options in the aftermarket. *See Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 464–78 (1992).

100. As a matter of law, however, 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 added); *see also, e.g.*, *Avaya Inc., RP v. Telecom Labs, Inc.*,

838 F.3d 354, 405 (3d Cir. 2016) (no *Kodak*-type aftermarket "when customers were put on clear notice that purchasing [defendant's product] precluded use of [third-party] maintenance"); *DSM Desotech, Inc. v. 3D Sys. Corp.*, 749 F.3d 1332, 1346 (Fed. Cir. 2014) ("[I]t is only the customers who learned about the [allegedly anticompetitive policy] after purchasing their equipment that are relevant to the 'locked-in' analysis."); *SMS Sys. Maint. Servs., Inc. v. Digital Equip. Corp.*, 188 F.3d 11, 19 (1st Cir. 1999) (concluding that "the easy availability of information" and "purely prospective nature" of an allegedly anticompetitive policy "take [a] case out of *Kodak*'s precedential orbit"); *United Farmers Ass'n, Inc. v. Farmers Ins. Exch.*, 89 F.3d 233, 238 (5th Cir. 1996) (rejecting 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"); *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").

101. Another court in this District has accurately explained that "to establish a single-brand aftermarket under *Kodak* and [*Newcal Indus., Inc. v. IKON Office Solution*, 513 F.3d 1038 (9th Cir. 2008)], 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) (emphasis added).

102. The assessment of a single-brand market involving two-sided transaction platforms must take into account interchangeability and the viability of switching on both sides of the platforms. *See In re Am. Express Anti-Steering Rules Antitrust Litig.*, 361 F. Supp. 3d 324, 344–45 (E.D.N.Y. 2019) (assessing interchangeability from the perspective of both merchants and cardholders); *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 n.2, 2282, 2287 (2018) (defining the relevant market to include all credit card transactions despite observing, for example, that not all consumers own credit cards from all brands and "only a small number of Visa and Master Card cardholders have an Amex").

103. iOS app distribution does not constitute a single-brand aftermarket.

104. *First*, there has been no material change in the conditions for accessing the App Store for either side of the platform. This is a *legal* requirement for any theory of a single-brand aftermarket. Failure to show a change in policy following lock-in—which does not exist either—is fatal to Epic's aftermarket theory. *See PSI Repair Servs., Inc. v. Honeywell, Inc.*, 104 F.3d 811, 820 (6th Cir. 1997).

105. 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. FOF ¶ 396. Yet consumers have always had (and continue to have) the ability to use web apps through their Internet browser, forgoing the App Store altogether, and that feature is becoming increasingly more attractive for some developers. FOF ¶ 400. Moreover, extensive information about gaming options, including on iOS, is easily accessible to consumers online. FOF ¶ 396.

106. For developers, Apple's terms have been consistently and clearly communicated through the DPLA, a comprehensive and transparent licensing agreement that sets out in minute detail the terms under which developers may use Apple's intellectual property. FOF ¶ 406. Any changes to the DPLA since its creation have been *pro*-developer: for example, in 2016, Apple announced that the commission on subscription renewals after one year would be reduced to 15%, and in 2020 announced that the commission for small app developers would likewise be reduced to 15%. FOF ¶¶ 161.2, 166. It is thus "clear [that developers] knowingly and voluntarily signed [the DPLA] in which they agreed to bind themselves" to Apple's policies. *W. L.A. Pizza, Inc. v. Domino's Pizza, Inc.*, No. 07-CV-7484, 2008 WL 11424181, at *7 (C.D. Cal. Feb. 26, 2008).

107. *Second*, there is no lock-in of customers. The App Store competes against many other game app platforms for both consumers and developers in the market for digital game transactions. *See supra* § II.B.ii.a (¶¶ 34–64). As explained above, many consumers already have access to alternative platforms through which they can purchase and play games, and many consumers actually *do* use those alternative platforms to play games like *Fortnite*. FOF ¶¶ 358–63.

108. Moreover, cross-platform games like *Fortnite* offered on a variety of platforms are becoming increasingly prevalent, and they make switching between platforms seamless because a consumer can carry over all of her rewards and progress between platforms. FOF ¶ 255.1. Likewise, most developers who distribute their games through the App Store also develop and distribute games through other platforms, making those platforms a viable alternative for consumers who, for whatever reason, desire to switch from the App Store. FOF ¶¶ 351–52. As a result, neither consumers nor developers are "locked in" to the App Store—they can and do pursue game transactions on a variety of other platforms.

109. Epic thus has established neither of the two legal elements of an aftermarket, and it therefore has failed to meet its burden to prove the relevant market. For that reason alone, Epic's claims fail.

110. Indeed, if Epic's foremarket-aftermarket approach were accepted, every game console manufacturer (including Microsoft, Sony, and Nintendo) would be considered a monopolist for digital game transactions on their own platforms. Game console manufacturers, like Apple, impose restrictions designed to ensure that all purchases of apps and in-app upgrades for their platforms go through their proprietary application transaction platforms. FOF ¶ 534. And a consumer who purchases a game console incurs a substantial upfront cost and will face some costs associated with purchasing a new game console if she wants to move platforms. *See* Jonathon Dornbush & Jordan Sirani, *Update: Comparing the Price of Every Game Console, with Inflation*, IGN (Sept. 18, 2020), https://perma.cc/B62Y-KPS5. Yet Epic 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.

111. Epic's aftermarket approach to market definition also is inconsistent with its recognition that the App Store constitutes a two-sided transaction platform. As Epic's expert, Dr. Evans, states: "app stores, which are online marketplaces, are two-sided platforms with

indirect effects; meet the economic definition of transaction platforms; and . . . sound economic analysis needs to consider both users and developers and the interdependencies." Yet Epic does not actually follow through and analyze the App Store as a two-sided transaction platform, as required by law. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). Instead, Epic and Dr. Evans analyze each side of the App Store *individually*, thus failing to account for the indirect network effects that characterize two-sided transaction platforms. FOF ¶¶ 423–24. This analytical error infects all of Epic's aftermarket analysis, thus rendering Epic's proposed aftermarket defective as a matter of law.

112. Because it is *Epic*'s burden to establish the market definition, and it has failed to do so, all of Epic's claims fail for that reason alone.

iv. The Hypothetical Monopolist Test Does Not Support Epic's Market Definition

113. Largely disregarding the legal standards outlined above, Epic invokes the "hypothetical monopolist test" set forth in the federal agencies' horizontal merger guidelines as support for its legally defective market definition. The test does not apply to Epic's claims and, even if it did, it does not support Epic's market definition.

b. The Hypothetical Monopolist Test Cannot Apply Here as a Matter of Law

114. The hypothetical monopolist test is an inappropriate and unworkable method for determining the relevant market in the context of monopolization claims involving a two-sided transaction platform such as the App Store. Accordingly, Epic cannot rely on the hypothetical monopolist test to support its single-brand market theory.

115. Under the hypothetical monopolist test, courts "ask[] whether a monopolist in the proposed market could profitably impose a small but significant nontransitory price increase ['SSNIP']." *Theme Promotions, Inc. v. News Am. Mktg. FSI*, 546 F.3d 991, 1002 (9th Cir. 2008). If enough "customers would respond to a SSNIP by purchasing substitute products, the SSNIP would not be profitable"; and where the SSNIP would not be profitable, "the market definition should be expanded to include those substitute products that constrain the monopolist's pricing." *Id.*

116. The hypothetical monopolist test is set forth in the federal antitrust enforcers' "Horizontal Merger Guidelines," which provides information regarding the Justice Department's approach to mergers that raise competition issues under Section 7 of the Clayton Act (15 U.S.C. § 18). U.S. Dep't of Justice & Fed. Trade Comm'n, *Horizontal Merger Guidelines* § 4.1.1 (2010). The guidelines themselves "are not binding on the courts." *Olin Corp. v. FTC*, 986 F.2d 1295, 1300 (9th Cir. 1993). On its own terms, the hypothetical monopolist test applies only to mergers, and that is the context in which it is most often deployed. *See, e.g.*, *Saint Alphonsus Med. Ctr.-Nampa Inc. v. St. Luke's Health Sys., Ltd.*, 778 F.3d 775, 783–84 (9th Cir. 2015) (analyzing market definition for challenge to merger under Section 7 of the Clayton Act); *United States v. Oracle Corp.*, 331 F. Supp. 2d 1098, 1111–12 (N.D. Cal. 2004) (same).

117. The hypothetical monopolist test does not apply to monopolization claims involving two-sided transaction platforms. The hypothetical monopolist test, "as it is usually conceived," makes no sense when applied to two-sided transaction platforms, because there are *two* prices that must be considered, one on each side of the platform. *See* Lapo Filistrucchi et al., *Market Definition in Two–Sided Markets: Theory and Practice*, 10 J. Competition L. & Econ. 293, 330 (2014). There is thus a "consensus in the literature" that, if it is to be applied at all, the test would have to be modified to "take into account changes in profits on both sides of the market and all feedback between demands on the two sides." *Id.* at 331.

118. The danger of applying the hypothetical monopolist test in the context of two-sided transaction platforms arises in part from the existence of indirect network effects, which require the analysis to take into account the fact that a price increase on one side of the platform and resulting departure of users will cause a corresponding departure of users on the other side. *See* Lapo Filistrucchi et al., *Market Definition in Two–Sided Markets: Theory and Practice*, 10 J. Competition L. & Econ. 293, 331 (2014).

119. Epic's own expert—Dr. Evans—has warned against this very shortcoming. As he stated in a 2008 article, "[t]he standard tools of antitrust and merger analysis, which were developed based on the economics of single-sided businesses, do not necessarily apply in ways that are material to the analysis of competition that involves multisided businesses." David S. Evans & Michael D. Noel, *The Analysis of Mergers that Involve Multisided Platform Businesses*, 4 J. Competition L. & Econ. 663, 664 (2008). Dr. Evans went on to explain that the hypothetical monopolist test "for defining a relevant market *does not apply* without *significant modifications*" to multisided businesses. *Id.* at 667 (emphasis added). That is because by imposing a SSNIP on side A, and "ignoring side *B*, the analyst fails to consider that the hypothetical price increase reduces the number of side *A* customers available to side *B*, which thereby reduces the prices that side *B* customers will pay, and furthermore reduces the number of side *B* customers available to side *A*, which in turn reduces the prices that side *A* customers will pay." *Id.* As a result, traditional application of the test to only one side of a two-sided platform would define the market "too narrowly," with "estimates of market concentration too high." *Id.* Dr. Evans further explained that the mistake is even "more profound" than simply an erroneous market definition, because the analysis could lead to "condemning practices that are innocuous in a two-sided context." *Id.*; *see also* David S. Evans & Michael D. Noel, *Defining Markets that Involve Multi-Sided Platform Businesses* 17 (Reg-Markets Ctr., Working Paper No. 07-18, 2007), http://ssrn.com/abstract=1027933 (noting that "[t]here are many reasons to be wary of mechanical market definition exercises such as [the] SSNIP test").

120. Consistent with the economic literature, *Amex* holds that a hypothetical monopolist test focusing on only one side of the platform is not permissible, because "[e]valuating both sides of a two-sided transaction platform is . . . necessary to accurately assess competition." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). The Second Circuit's *Amex* decision similarly emphasized that to the extent the hypothetical monopolist test can ever be applied to two-sided transaction platforms, it *must* "consider the feedback effects inherent on the platform by accounting for the reduction in [demand on one side of the

platform] that would accompany any degree of . . . attrition" on the other side. *United States v. Am. Express Co.*, 838 F.3d 179, 200 (2d Cir. 2016).

121. At least one court evaluating two-sided transaction platforms after *Amex* has declined to apply the hypothetical monopolist test, instead relying upon traditional economic "'practical indicia' to assess whether products are 'reasonably interchangeable.'" *United States v. Sabre Corp.*, 452 F. Supp. 3d 97, 138, 142 (D. Del. 2020) (rejecting the DOJ's proposed market definition relying on the hypothetical monopolist test in a merger case involving two-sided transaction platforms).

122. Epic's expert, Dr. Evans, attempts to apply the traditional hypothetical monopolist test to two different markets in the context of this case, but neither of his tests supports Epic's relevant market theory.

123. In his first test, Dr. Evans attempts to establish a market for operating systems by applying the SSNIP to the price of an iOS device itself. That is legal error in at least two ways.

124. *First*, the price of both operating systems and iOS devices are meaningless here, because the relevant product is *transactions*, not operating systems or iOS devices. FOF ¶ 342. Epic is not a competitor or consumer in the mobile devices *or* the operating systems markets. Nor did Epic plead in its Complaint the existence of a foremarket for operating systems or assert any claim for relief regarding any market for operating systems or devices. *See supra* § II.B.iii (¶¶ 80–90); FOF ¶ 391. Whether a single seller of mobile operating systems or smartphones could profitably exercise monopoly power is thus irrelevant to this case.

125. *Second*, even assuming a foremarket for operating systems could otherwise be relevant to this case, Dr. Evans' analysis is incorrect in that he applies the hypothetical monopolist test to *iOS devices*, not to operating systems. FOF ¶ 428. Any evidence of substitution revealed by Dr. Evans' analysis thus relates not to his alleged foremarket for operating systems, but to an entirely *different* market for iOS devices. That is presumably because consumers do not purchase operating systems as standalone products; they purchase smartphones. FOF ¶ 394. There is therefore not even a rational way to apply the hypothetical monopolist test to Dr. Evans' proposed foremarket. Thus, Dr. Evans' first test does not support Epic's foremarket theory.

126. In his second test regarding the purported aftermarket for app distribution, Dr. Evans once again purports to apply the SSNIP to the wrong thing—this time, he applies the SSNIP to the price that a consumer pays for digital transactions. That is, he questions whether a hypothetical monopolist could profitably impose a SSNIP to an app or in-app content, concluding that it could. But Dr. Evans focuses exclusively on the price of in-app purchases, to the exclusion of other digital transactions in the relevant market. FOF ¶ 435.

127. Moreover, both of Dr. Evans' tests commit precisely the conceptual mistake that the academic literature (including his own writings) warns against: he analyzes each side of the platform individually, thereby ignoring the strong indirect network effects that are the characteristic feature of two-sided transaction platforms. *See* David S. Evans & Michael

D. Noel, *The Analysis of Mergers that Involve Multisided Platform Businesses*, 4 J. Competition L. & Econ. 663, 667 (2008). Indeed, in the case of the App Store, if a small number of consumers were to leave the platform because of increased transaction fees or other costs, then the App Store would become less valuable to developers, who may then also depart, leading to a "feedback loop of declining demand." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018). Yet Dr. Evans assumes that a departure of consumers will have no corresponding departure of developers, ignoring the indirect network effects he admits are indicative of a two-sided transaction platform. FOF ¶ 424.

128. Dr. Evans' failure to consider these indirect network effects leads him to propose a market that is too narrow. Without accounting for the indirect network effects of a two-sided transaction platform, the hypothetical monopolist test overstates the ability of a hypothetical monopolist to profitably raise prices. While an increase in price on one side of the platform may initially appear profitable when accounting only for the loss of consumers on *that* side of the platform, the increase may in fact be unprofitable after consumers on the *other* side of the platform also depart upon realizing that the value of the platform to them has decreased. Thus, Dr. Evans' hypothetical monopolist test overstates the ability of Apple (or any other operator of a two-sided transaction platform) to profitably raise prices above a competitive level, leading him to define the market to exclude the competitors that constrain Apple's market power.

129. For these and other reasons, Dr. Evans' application of the hypothetical monopolist test does not satisfy the standard for reliability of expert evidence under Federal Rule of Evidence 702.[5]

130. In the Ninth Circuit, it is the responsibility of the trial court to "assure that the expert testimony 'both rests on a reliable foundation and is relevant to the task at hand.'" *Primiano v. Cook*, 598 F.3d 558, 564 (9th Cir. 2010) (quoting *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993)). "[E]xpert evidence is inadmissible where the analysis is the result of a faulty methodology or theory." *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1047–48 (9th Cir. 2014) (quotation marks omitted). The expert's methodology must have obtained "general acceptance" in the relevant scientific community. *Daubert*, 509 U.S. at 594 (quotation marks omitted).

131. Dr. Evans' application of the hypothetical monopolist test is unreliable and has not obtained "general acceptance" because the test as applied by Dr. Evans fails to account for indirect network effects. *See* Lapo Filistrucchi et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. Competition L. & Econ. 293, 331 (2014) (noting the "consensus in the literature" that any application of the hypothetical monopolist test to a two-sided transaction platform would have to take into account indirect network effects). Dr. Evans *asserts*, without any actual analysis or tests, that because the separate effects of price changes on each side are small (based on his erroneous results from other tests), there are no indirect network effects. FOF ¶ 424. But as Dr. Evans' own publications confirm, to properly account for indirect network effects in the context of a two-sided transaction

[5] The Court directed the parties not to file motions in limine before trial. Hr'g Tr. 18:2 (Mar. 1, 2021).

platform, an economist should consider at least fourteen parameters in the demand system." David S. Evans & Michael D. Noel, *Analyzing Market Definition and Power in Multi-Sided Platform Markets* 22–27 (Oct. 21, 2005), https://perma.cc/PHC9-MHJ8. Dr. Evans does not even enumerate those fourteen parameters here, and in fact accounts for less than four inputs per side. FOF ¶ 423.

132. Remarkably, Dr. Evans *does not dispute that his methodology is flawed*. Instead, he claims that any shortcomings should be excused under the maxim that perfection should not be the enemy of the good. That concession is fatal—in a case in which a firm seeks to compel its competitor to restructure its business model and provide access to its intellectual property at no or nominal cost, the guiding economic analysis should be based on hard science and reliable methodologies, not aphorisms. It is not enough to merely find a "good enough" means of assessing market definition. There is no "good enough" standard in economic science—either the methodology is sound, or it is not. And the product of an unsound methodology cannot be relied on by the Court.

133. Dr. Evans himself has reiterated that while it might be "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*." David S. Evans, *The Antitrust Economics of Free*, Comp. Pol. Int'l, Spring 2011, at 84 (emphasis added). The challenges *were* overwhelming here, as Dr. Evans admits, yet he applied the test anyway. That is not a reliable methodology.

134. Importantly, Epic, not Apple, bears the burden of proving market definition. *See Thurman Indus., Inc. v. Pay 'N Pak Stores, Inc.*, 875 F.2d 1369, 1373 (9th Cir. 1989). Epic's own expert, though, has already admitted that his analysis of market definition is deficient, conceding that his application of the hypothetical monopolist test is deficient and offering no alternative analysis for the Court to consider. As a result, Dr. Evans' application of the hypothetical monopolist test is unreliable and his opinion on that basis is inadmissible.

135. The defects in Dr. Evans' application of the hypothetical monopolist test do not present a typical "battle of the experts"; rather, they present a *legal* bar to admissibility of his opinion. Reliability of expert testimony depends on "appropriate criteria such as testability, publication in peer-reviewed literature, known or potential error rate, and general acceptance." *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1044 (9th Cir. 2014). *All* of these sources demonstrate not only that Dr. Evans' methodology is not accepted in relevant academic community, but also that Dr. Evans' peers *and Dr. Evans himself* have expressly warned against application of the hypothetical monopolist test in this context without appropriate modifications or caveats. In a different case, the hypothetical monopolist test may be appropriate, but here, where Dr. Evans has admitted—both in this case and his own pre-litigation writings—that the hypothetical monopolist test is flawed in this context, the Court must exercise its gatekeeping function and preclude admissibility of Dr. Evans' testimony in this respect at trial.

136. For the same reasons, Epic's criticism of Apple's experts for not performing a hypothetical monopolist test is also legally deficient, and any testimony from Epic's experts to that effect is inadmissible as both unreliable and irrelevant pursuant to the *Daubert* standard.

Such testimony does not have "a valid connection to the pertinent inquiry," *Primiano v. Cook*, 598 F.3d 558, 565 (9th Cir. 2010) (quotation marks omitted), because the hypothetical monopolist test is neither a necessary nor sufficient predicate to market definition in this context. And such testimony does not have a "reliable basis in the knowledge and experience of the relevant discipline" for all of the reasons outlined above. *Id.* (quotation marks omitted).

137. As misapplied by Epic's experts, the hypothetical monopolist test is irrelevant and unreliable as a methodology to evaluate the proper market in this case. No testimony regarding the application (or non-application) of the hypothetical monopolist test is admissible.

c. Even If the Hypothetical Monopolist Test Could Apply, It Is Not Dispositive

138. In any event, the hypothetical monopolist test, even if otherwise applicable here, is not dispositive. "The outer boundaries of a product market are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Epic appears to erroneously assume that the hypothetical monopolist test is the *only* permissible methodology for defining a market—Dr. Evans' critiques of Apple's experts are largely limited to criticizing their failure to apply the hypothetical monopolist test. This assumption is legally incorrect.

139. "[T]here is no requirement in [the Ninth] Circuit that an expert use any particular form of analysis in developing an opinion on market definition." *Sumotext Corp. v. Zoove, Inc.*, No. 16-CV-1370, 2020 WL 533006, at *11 (N.D. Cal. Feb. 3, 2020) (rejecting party's objection that the opposing expert's opinion on market definition was "unreliable because he failed to perform the SSNIP test"). This Court has observed in other cases that there is no "legal support" for the proposition that an expert opinion is "inadmissible because he failed to conduct either a formal econometric analysis of cross-elasticity of demand or a 'hypothetical monopolist' test." *Apple iPod iTunes Antitrust Litig.*, No. 05-CV-37-YGR, 2014 WL 4809288, at *7 (N.D. Cal. Sept. 26, 2014). Were it otherwise, and the hypothetical monopolist test were *necessary* to a proper evaluation of market definition as Epic contends, many landmark antitrust cases would have to be condemned for evaluating market definition without any reference to SSNIP or the hypothetical monopolist test. *See, e.g.*, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285–87 (2018); *Brown Shoe Co. v. United States*, 370 U.S. 294, 325–28 (1962); *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1202–06 (9th Cir. 1997).

140. For example, in addition to assessing quantitative data regarding the cross-elasticity of demand, the Ninth Circuit allows courts to apply "a qualitative approach when determining the relevant market." *GSI Tech., Inc. v. Cypress Semiconductor Corp.*, No. 11-CV-3613, 2015 WL 364796, at *3 (N.D. Cal. Jan. 27, 2015); *see also, e.g.*, *Tanaka v. Univ. of S. Cal.*, 252 F.3d 1059, 1063–64 (9th Cir. 2001) (analyzing market definition using only qualitative factors and without reference to the hypothetical monopolist test).

141. Under this approach, courts may define the boundaries of a market by looking to "such practical indicia as 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." *Brown Shoe Co.*, 370 U.S. 294, 325 (1962); *see also McWane, Inc. v. FTC*, 783 F.3d 814, 829–30 (11th Cir. 2015) (noting that "[c]ourts routinely rely on qualitative economic evidence to define relevant markets" (quotation marks omitted)).

142. Indeed, relying on the hypothetical monopolist test to the exclusion of qualitative factors can be dangerous and lead to unduly narrow markets. One of Epic's experts, Dr. Cragg, testified that in the *Amex* case before the Second Circuit, multiple sources of analysis, including a hypothetical monopolist test, led to the erroneous conclusion that the market there was one-sided. Dr. Cragg went on to note that he has forgone applying the hypothetical monopolist in prior cases, and that many economists have opined that a hypothetical monopolist or a SSNIP test is not necessary to define a relevant market, because there's a certain circularity to the definition.

143. Even if Epic were correct that one of the factors, "sensitivity to price changes," weighed in favor of its market definition, *all* of the remaining factors support Apple's market definition.

144. *First*, there is widespread industry and public recognition of the market for digital transactions for game apps. The detailed analysis set forth above makes clear that consumers in fact have a variety of options for downloading and playing game apps, and have a variety of devices available to them to do so. *See supra* § II.B.ii.a (¶¶ 39–45). And as noted above, Apple's internal analyses confirm that it views itself as being in competition with other digital transaction platforms for game apps. *See supra* § II.B.ii.a (¶ 54).

145. *Second*, digital transactions for game apps have "peculiar characteristics or uses." Non-game apps serve a wide range of useful functions—they might give you directions, perform complex equations, or find a good restaurant. But all game apps have the same distinct use—the entertainment of the user. To be sure, game apps also have wide variety in terms of design and complexity, but all game apps share a common use among users that distinguishes them from non-game apps.

146. *Third*, game apps have unique production facilities or technology. Many game apps require special software to run effectively. FOF ¶ 345. Epic knows this well, as it designed the Unreal Engine, software specifically designed to help developers create games for distribution on various game transaction platforms. FOF ¶ 250.

147. *Fourth*, digital transactions for game apps have distinct customers. On the one side are game developers, which as noted above, tend to specialize in the production of game apps and tend to derive the great majority of their revenue from game apps as opposed to non-game apps. *See supra* § II.B.ii.b (¶ 68). On the other side are consumers, many of which might play games casually, but only a subset of which consistently make purchases on games like *Fortnite*, engage in online play, or purchase consoles or other

gaming-specific devices. When Epic issues new content for *Fortnite*, it is targeting a specific subset of the iPhone user base.

148. *Fifth*, digital transactions for game apps have distinct prices. As discussed elsewhere, *see infra* § III.B.i.a (¶ 230), the 30% base commission rate is standard in the industry for digital transactions for game apps. Although there are some small market outliers, the major market participants—Apple, Google, Microsoft, Sony, Nintendo, etc.—all charge a base commission of 30%, with reduced rates in certain circumstances. This pricing supports the notion that these platforms are in competition with each other in the same market.

149. *Finally*, there are specialized vendors for digital transactions for game apps. While some platforms, like the App Store, offer a wider variety of apps, many platforms focus exclusively or nearly exclusively on games. A consumer cannot buy (and likely would not want to buy) a map app for use on the PlayStation 5, but rather would go to that platform specifically to execute digital transactions for games. FOF ¶¶ 349–349.3. Epic appears to recognize that games are a discrete subset of apps, as it describes EGS as "a digital video game storefront through which gamers can download various games, some developed by Epic, and many offered by third-party game developers." Dkt. 1 ¶ 27.

150. All of this evidence must be also be considered against the larger backdrop of the evidence of interchangeability. The App Store competes with other transaction platforms—including those provided through desktops, laptops, gaming consoles, and other smartphones—in the market for digital transactions for game apps. Consumers have a variety of choices when determining whether to download a game app on their phone, their PC, their Nintendo Switch, or some other device, and Apple, like all other market participants in this area, must compete to persuade consumers to use its platform for those digital transactions. And iOS users even have the option—as they always have—to use the web for digital game transactions.

151. For all of these reasons, Epic's proposed market definition is untenable.

C. Geographic Market[6]

152. Epic's complaint proposes a "worldwide" geographic market, Dkt. 1 ¶¶ 57, 118, and its expert proposes a global market excluding China. Both of these proposed geographic markets are legally improper and ignore significant barriers that separate the U.S. market for digital game transactions from the rest of the world. The correct relevant geographic market is the United States, and more specifically, it is U.S. consumers and developers inside and outside of the United States who sell to U.S. consumers. FOF ¶¶ 438–46.

153. The geographic market in a case involving a two-sided transaction platform must take into account both sides of the platform—here, consumers and developers. FOF ¶ 437. Moreover, when evaluating the geographic market, it is inappropriate to merge multiple geographic areas into one market when there are "barrier[s]" preventing competition between the areas, *Morgan, Strand, Wheeler & Biggs v. Radiology, Ltd.*, 924 F.2d 1484,

[6] Geographic market definition is addressed in § 4.2, page 21 of the Joint Elements Submission.

1490 (9th Cir. 1991), or if consumers in one geographic area do not have access to "external sources" of the relevant product, *Pacifica Kidney Ctr., Inc. v. Nat'l Med. Care, Inc.*, 995 F.2d 232 (9th Cir. 1993) (unpublished opinion).

154. Courts must also keep in mind a core tenet of American antitrust law: It "do[es] not regulate the competitive conditions of other nations' economies." *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 582 (1986). The U.S. antitrust laws are concerned only with *U.S.* consumer welfare, not the welfare of foreign consumers. *See Vollrath Co. v. Sammi Corp.*, No. 85-CV-820, 1989 WL 201632, at *8 n.21 (C.D. Cal. 1989) (noting that "harm to . . . Korean manufacturers could not form the basis of an antitrust claim").

155. The evidence demonstrates that Epic's proposed global market is legally untenable.

156. Consumers generally access game app platforms like the App Store through country-specific "storefronts." FOF ¶ 438. The storefronts of different countries are distinct from each other, offering differing apps and features. FOF ¶ 439. For example, in some countries, such as China and South Korea, there are specific licensing and disclosure requirements that must be met before apps, including games, can be released to the public. FOF ¶ 442.

157. Consumers in a given country, by default, access game app platforms through their respective domestic storefronts. FOF ¶¶ 440–41. Consumers are generally restricted to their domestic storefronts because of regulatory restrictions, language barriers, and currency differences. FOF ¶¶ 441–42; *cf. TYR Sport, Inc. v. Warnaco Swimwear, Inc.*, 709 F. Supp. 2d 802, (C.D. Cal. 2010) (considering "differences in local regulations" and "currency and pricing" as important barriers to a geographic market). On the App Store, for instance, consumers cannot change their storefront to that of another country without completing a complicated and inconvenient process. FOF ¶ 441. And they must have a domestic credit card or bank to use a particular storefront. FOF ¶ 442.

158. U.S. consumers, then, cannot "practicably turn" to any other country's storefront for digital game transactions, *United States v. Philadelphia Nat'l Bank*, 374 U.S. 321, 359 (1963) (quotation marks omitted), but instead effectively have access to digital game transactions in only the United States, FOF ¶ 444. There are no "alternate sources of supply" of digital game transactions. *Morgan, Strand, Wheeler & Biggs v. Radiology, Ltd.*, 924 F.2d 1484, 1490 (9th Cir. 1991) (quotation marks omitted). As a result, from the perspective of consumers, the United States is a distinct area of competition.

159. On the developer side of the platform, however, the same restrictions do not exist. Both foreign and U.S. developers can and do transact with U.S. consumers through the U.S. storefronts of game app platforms. FOF ¶ 445 No significant barriers prevent a Chinese game developer, for example, from selling a game to U.S. consumers on the App Store's U.S. storefront. *Id.* Hence, on the developer side of the platform, the geographic market should include both foreign and U.S. developers who sell to U.S. consumers.

III. EPIC'S SHERMAN ACT CLAIMS

A. General Principles

160. The principal theories of relief in Epic's Complaint arise out of Sections 1 and 2 of the Sherman Act. *See generally* Dkt. 1. Epic has asserted six claims under the Sherman Act, organized under four legal frameworks:

(1) Unlawful monopoly maintenance under Section 2 of the Sherman Act:

-Unlawful monopoly maintenance in the "iOS App Distribution Market," *see infra* § III.B.i (¶¶ 216–330);

-Unlawful monopoly maintenance in the "iOS In-App Payment Processing Market," *see infra* § III.B.ii (¶¶ 331–73);

(2) Denial of essential facility in the "iOS App Distribution Market" under Section 2 of the Sherman Act, *see infra* § III.B.iii (¶¶ 374–419);

(3) Tying in the App Store in the "iOS App Distribution Market" to In-App Purchase in the "iOS In-App Payment Processing Market" under Section 1 of the Sherman Act, *see infra* § III.C.i (¶¶ 423–86);

(4) Unreasonable restraints of trade under Section 1 of the Sherman Act:

-Unreasonable restraints of trade in the "iOS App Distribution Market," *see infra* § III.C.ii (¶¶ 487–530); and

-Unreasonable restraints of trade in the "iOS In-App Payment Processing Market," *see infra* § III.C.iii (¶¶ 531–41).

i. Epic's Theories of Liability

161. Each of these legal frameworks consists of different, although sometimes overlapping, basic elements.

162. A plaintiff pursuing a Section 2 claim for unlawful monopoly maintenance must 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." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quotation marks omitted). The second of these elements requires the plaintiff to show the willful maintenance of monopoly power "through exclusionary conduct." *MetroNet Servs. Corp. v. Qest Corp.*, 383 F.3d 1124, 1130 (9th Cir. 2004). The full framework for unlawful monopoly maintenance claims under Section 2 is set forth below. *See infra* § III.B.i (¶¶ 216–19).

163. A plaintiff pursuing a Section 2 claim for denial of an essential facility must show (1) that the defendant is "a monopolist in control of an essential facility"; (2) that the plaintiff "is unable reasonably or practically to duplicate the facility"; (3) that the defendant "has refused to provide [the plaintiff] access to the facility"; and (4) that "it is feasible for [the

defendant] to provide such access." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1185 (9th Cir. 2016). The full framework for essential facility claims under Section 2 is set forth below. *See infra* § III.B.iii (¶¶ 374–84).

164. A plaintiff pursuing a Section 1 claim for unlawful tying must show the linking of two separate products from two separate product markets. *See Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006). Tying claims are assessed under either the *per se* framework or the rule of reason analysis, *see id.* at 29, although under either analysis, the Court must assess the anticompetitive effects of the alleged tying. The full framework for tying claims under Section 1 is set forth below. *See infra* § III.C.i.a (¶¶ 426–30).

165. A plaintiff pursuing a Section 1 claim for unreasonable restraint of trade 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). Except for a small number of agreements that are treated as *per se* unreasonable restraints of trade, agreements alleged to be in restraint of trade are analyzed under the burden-shifting framework of the "rule of reason." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018). The full framework for claims of unreasonable restraint of trade under Section 1 is set forth below. *See infra* § III.C.ii (¶¶ 487–504).

166. Although Epic has pursued different theories of relief here, all of its claims revolve around and challenge the same fundamental "contractual and technical restrictions." Dkt. 1 ¶ 17.

167. *First*, Epic challenges several contractual provisions:

A. Section 3.2(g) of the DPLA, which provides:

> Applications for iOS Products, Apple Watch, or Apple TV developed using the Apple Software may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store, Custom App Distribution, for beta distribution through TestFlight, or through Ad Hoc distribution as contemplated in this Agreement.

B. Section 3.3.2(b) of the DPLA, which provides:

> Interpreted code may be downloaded to an Application but only so long as such code . . . (b) does not create a store or storefront for other code or applications . . . .

C. Section 3.2.2(i) of the App Store Review Guidelines, which prohibits:

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

D. Section 3.1.1 of the App Store Review Guidelines, which provides:

> 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.

E. Section 3.1.3(a) of the App Store Review Guidelines, which provides:

> Apple may allow a user to access previously purchased content or content subscriptions . . . , provided that you agree not to directly or indirectly target iOS users to use a purchasing method other than in-app purchase, and your general communications about other purchasing methods are not designed to discourage use of in-app purchase.

168. *Second*, Epic challenges two technical designs of iOS and the App Store:

A. iOS does not permit users to download app stores or apps directly from the websites (i.e., sideloading), and instead requires that native apps be downloaded only from the App Store. *See* Dkt. 1 ¶ 66.

B. Apple pre-installs the App Store on the home screen of every iOS device it sells, and does not pre-install competing app stores on iOS devices or allow users to remove the App Store. *See* Dkt. 1 ¶ 67.

ii. Business Justifications and Procompetitive Effects

169. Common to all of Epic's theories is that the Court must (assuming Epic can clear the numerous other threshold legal questions) assess the competitive effects of the challenged contractual and technical restraints, including any legitimate procompetitive business justifications for the conduct. Each legal framework for liability, however, analyzes procompetitive business justifications under a different paradigm.

170. *First*, in an unlawful monopoly maintenance claim under Section 2, "the plaintiff is obliged to make out a prima facie case that the monopolist has engaged in 'exclusionary' conduct," and "[a]t that point the proof burden ordinarily shifts to the defendant to offer a 'justification' for the conduct." 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.); *see also FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) ("[I]f a plaintiff successfully establishes a *prima facie* case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a 'procompetitive justification' for its conduct." (quotation marks omitted)). The plaintiff "may rebut an asserted business justification by demonstrating either that the justification does not legitimately promote competition or that the justification is pretextual." *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1212 (9th Cir. 1997).

171. At no point in a Section 2 monopoly maintenance claim is the Court to consider the availability of less restrictive alternatives, because in an unlawful monopoly maintenance claim under Section 2, "there is no least restrictive alternative requirement," *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 620 (9th Cir. 1990), and there is no "'balancing' of social gains against competitive harms," 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.); *see also Behrend v. Comcast Corp.*, No. 03-CV-6604, 2012 WL 1231794, at *19 (E.D. Pa. Apr. 12, 2012).

172. *Second*, in an essential facility claim under Section 2, once the defendant has offered legitimate business justifications for its conduct, the plaintiff bears "the burden of proving

that the defendant acted without a legitimate business justification." *City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1366–68 (9th Cir. 1992). This element is part of the plaintiff's burden to show that providing access to the essential facility would be feasible. *See City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1380 (9th Cir. 1992).

173. *Third*, in an unreasonable restraint of trade claim under Section 1, procompetitive business justifications are part of the rule-of-reason balancing. Under that 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." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018) (citations omitted).

174. *Fourth*, in a tying claim under Section 1, procompetitive business justifications provide an affirmative defense to a tying claim analyzed under the *per se* rule. *See Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1348 (9th Cir. 1987). If the tying claim is analyzed under the rule-of-reason framework, then procompetitive business justifications are analyzed in the ordinary course of that analysis as set forth above.

175. Despite the varying frameworks and burdens, the procompetitive design of iOS and the App Store is relevant to all of Epic's claims, assuming Epic could satisfy the other elements of its claims. It therefore is useful upfront to preview the various ways in which Apple has designed the App Store to be procompetitive in numerous respects.

176. The "walled garden" design of iOS and the App Store has many procompetitive effects, discussed in more detail with regard to particular claims below. *See infra* § III.B.i.d (¶¶ 299–317), § III.B.ii.d (¶¶ 352–65). Some cross-cutting points, however, bear mention at the outset.

177. The design of iOS enhances product reliability and security, as well as consumer safety and privacy. Because Apple is able to curate which native apps users are able to download to their iPhones, it is better able to protect its users from malware, spyware, privacy breaches, or other content that may be harmful to users or their devices. The security, privacy, and reliability that Apple provides is a result of its substantial investment into the App review process, through which native iOS apps are reviewed by Apple's review team to ensure that consumers are receiving a safe and secure experience. Apple has invested substantial resources into ensuring that the App Store is the most trusted place to download apps.

178. These security, privacy, and reliability features also benefit developers, because developers who distribute their apps through the App Store benefit from the credibility and goodwill Apple has established through its curation of the App Store. Apple puts its reputation behind all of the apps distributed through the App Store, and consumers are thus willing to download apps from smaller developers who otherwise may not have an existing reputation for consumer security or reliability. Developers therefore benefit from having a centralized

marketplace for apps that users know and trust. These are the network effects that characterize two-sided transaction platforms.

179. Indeed, Apple's "walled garden" approach is a point of competitive differentiation from smartphones and tablets that run on other operating systems, particularly Android. Android devices typically allow sideloading, third-party app stores, and other alternative methods of app distribution. Consumers who value such features may purchase those devices, while consumers who believe the additional risks outweigh the benefits may purchase iOS devices. Similarly, developers who value alternative distribution channels may choose to create Android apps, while others may choose to create native iOS apps to distribute through the App Store (or web apps if they wish to reach iOS users through other means). If iOS were forced to be more like Android, this important aspect of consumer and developer choice would be eliminated, and one of the technological grounds on which Android and iOS devices actively compete ("open" vs. "closed" systems) would be resolved by judicial fiat rather than by operation of the free market.

180. The design of iOS also protects Apple's proprietary information and intellectual property, and prevents free-riding. The innovation offered by the App Store has not come without cost—Apple has invested billions of dollars into the development of iOS and the App Store, and continues to make substantial investments to improve the quality of the services offered therein. Apple must do so because, as noted above, it is in constant competition with other transaction platforms that offer similar services. Apple has chosen to make iOS and the App Store available to third-party developers, and to provide tools to developers to help them design iOS-compatible apps, contingent on developers executing a license agreement that gives them a limited license to use Apple's intellectual property. The "walled garden" design of iOS prevents developers from free-riding on Apple's innovation and design. There is no dispute here that development and distribution of iOS-compatible apps requires use of Apple's intellectual property, and the terms and conditions that Apple places on the licensing of that intellectual property are a procompetitive component of the design of iOS that allow Apple's property rights to be *shared* while still incentivizing innovation by other firms.

181. It is noteworthy in this respect that Epic persistently misquotes Section 3.2(g) of the DPLA, which—according to the Complaint—"requires that developers distribute *their apps* only through the App Store." Dkt. 1 ¶ 71 (emphasis added). What the DPLA actually says is that "[a]pplications for iOS Products . . . *developed using the Apple Software* may be distributed only if selected by Apple (in its sole discretion) for distribution via the App Store." FOF ¶ 106.3 (emphasis added). Epic, while complaining about Apple's requirement that native iOS apps be distributed through the App Store, fails to acknowledge that such apps use Apple's intellectual property.

182. These and a number of other procompetitive effects of the design of iOS and the App Store are discussed in more detail below, but they make clear as a threshold matter that what Epic is challenging here is a feature that was designed from the start to encourage innovation, enhance the consumer experience, and broaden choice. Developers, including Epic, have benefitted greatly from the design of iOS, and it is through Apple's careful curation of the App Store that the thriving app marketplace has emerged.

ii. Causal Antitrust Injury[7]

183. Another element that is common to all of Epic's Sherman Act claims and that should be considered as a threshold matter is the issue of causal antitrust injury.

184. Every plaintiff bringing an antitrust claim must show "(1) unlawful conduct, (2) causing an injury to the plaintiff, (3) that flows from that which makes the conduct unlawful, and (4) that is of the type the antitrust laws were intended to prevent." *Feitelson v. Google Inc.*, 80 F. Supp. 3d 1019, 1027 (N.D. Cal. 2015) (quotation marks omitted). The Ninth Circuit has also imposed an additional element—that "the injured party be a participant in the same market as the alleged malefactors," meaning "the party alleging the injury must be either a consumer of the alleged violator's goods or services or a competitor of the alleged violator in the restrained market." *Somers v. Apple, Inc.*, 729 F.3d 953, 963 (9th Cir. 2013) (quotation marks omitted).

185. Most relevant here, "[t]he Supreme Court has made clear that injuries which result from increased competition . . . are not encompassed by the antitrust laws." *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1057 (9th Cir. 1999). "Where the defendant's conduct harms the plaintiff without adversely affecting competition generally, there is no antitrust injury." *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1158 (9th Cir. 2003).

186. Epic has not identified any injury of the type the antitrust laws protect. At bottom, Epic does not like the terms on which Apple has chosen to deal with it or other developers, but that is not a basis for an antitrust claim. What Epic really wants is to avoid paying the 30% commission that it agreed to pay Apple. At most, that is an injury to *Epic*, it is not an injury to *competition*. *See Gorlick Distrib. Ctrs., LLC v. Car Sound Exhaust Sys., Inc.*, 723 F.3d 1019, 1024–25 (9th Cir. 2013) (explaining that a plaintiff must show injury to "competition in the market as a whole, not merely injury to itself as a competitor"). Epic also seeks to dictate the terms upon which Apple licenses its intellectual property to developers so that Epic can earn more money, but again, that is not an antitrust injury.

iii. Foreign Trade Antitrust Improvements Act[8]

187. The final piece that is common to all of Epic's Sherman Act claims is that foreign conduct—including consumer spending on foreign storefronts of the App Store—is irrelevant to Epic's Sherman Act claims.

188. "The FTAIA provides that the Sherman Act 'shall not apply to conduct involving trade or commerce (other than import trade or import commerce) with foreign nations unless—(1) such conduct has a direct, substantial, and reasonably foreseeable effect—(A) on trade or

[7] Causal antitrust injury is addressed in § 7.3, page 67 of the Joint Elements Submission.

[8] The Foreign Trade Antitrust Improvements Act is addressed in § 9, pages 82–83 of the Joint Elements Submission.

commerce which is not trade or commerce with foreign nations.'" *United States v. Hui Hsiung*, 778 F.3d 738, 750–51 (9th Cir. 2015) (quoting 15 U.S.C. § 6a).

189. "[The FTAIA] initially lays down a general rule placing all (nonimport) activity involving foreign commerce outside the Sherman Act's reach. It then brings such conduct back within the Sherman Act's reach provided that the conduct both (1) sufficiently affects American commerce, *i.e.*, it has a direct, substantial, and reasonably foreseeable effect on American domestic, import, or (certain) export commerce, and (2) has an effect of a kind that antitrust law considers harmful, *i.e.*, the effect must giv[e] rise to a [Sherman Act] claim." *United States v. Hui Hsiung*, 778 F.3d 738, 754 (9th Cir. 2015) (quoting *F. Hoffmann–La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 162 (2004)).

190. A direct effect "follows as an immediate consequence of the defendant's activity," "without deviation or interruption." *United States v. LSL Biotechnologies*, 379 F.3d 672, 680 (9th Cir. 2004) (quotation marks omitted).

191. An effect is substantial if it "involves a sufficient volume of U.S. commerce" and is not "a mere 'spillover effect,'" *see Sun Microsystems Inc. v. Hynix Semiconductor Inc.*, 534 F. Supp. 2d 1101, 1110 (N.D. Cal. 2007), and it is reasonably foreseeable if it would "have been evident to a reasonable person making practical business judgments," *Animal Sci. Prods., Inc. v. China Minmetals Corp.*, 654 F.3d 462, 471 (3d Cir. 2011).

192. Epic's proposed "worldwide market" for "iOS app distribution" includes non-import commerce with foreign nations—i.e., the distribution of apps to consumers in other countries. The FTAIA, however, provides that the Sherman Act does not apply to such conduct unless an exception applies.

193. Epic has not carried its burden of establishing that the distribution of apps to consumers in other countries has either a direct or a substantial effect on U.S. commerce. All of the conduct of which it complains in this suit occurred in the United States—the design of iOS, the design and launch of the App Store, the implementation of IAP, the execution of the DPLA, and the termination of Epic's DPLA following its willful breach. There is no evidence that any conduct overseas has *any* domestic effect, and, more importantly, no evidence that any conduct overseas has any *anticompetitive* domestic effect. *See United States v. Hui Hsiung*, 778 F.3d 738, 754 (9th Cir. 2015).

194. Indeed, Epic *cannot* prove that foreign conduct has an effect here, because Magistrate Judge Hixson denied Epic's application to take discovery regarding Apple's activities and customers outside of the United States, concluding that "[a]ll of the claims and defenses in this case arise under U.S. or California law, not some non-existent worldwide antitrust law." *See* Dkt. 226 at 3. Epic did not appeal that order, and no discovery was thus taken concerning foreign conduct. Evidence regarding conduct overseas thus simply is not in the record.

195. That any foreign conduct of Apple is excluded from Epic's Sherman Act claims is further made apparent by the fact that Epic *has* attempted to pursue litigation against Apple for its foreign conduct in other, foreign forums. The Court may properly take judicial notice of

these proceedings. *See U.S. ex rel. Robinson Rancheria Citizens Council v. Borneo, Inc.*, 971 F.2d 244, 248 (9th Cir. 1992). For example, there currently is pending a proceeding against Apple in Australia related to its conduct relevant in that jurisdiction. *See* Josh Taylor, *Fortnite Maker Epic Games Sues Apple in Australia for App Store Ban*, The Guardian (Nov. 17, 2020), https://perma.cc/2VV4-2TM7. Epic also tried to bring suit against Apple in the UK for foreign conduct, although that case was dismissed. *See Epic's Bid to Sue Apple Over Fortnite in UK Rejected*, BBC News (Feb. 22, 2021), https://perma.cc/JNU8-VCTY. And Epic filed a complaint with the European Commission's directorate-general for competition, alleging that Apple's foreign conduct violated EU law. *See Epic Game Files EU Antitrust Complaint Against Apple*, Epic Games (Feb. 17, 2021), https://perma.cc/3P4U-62TS. Thus, even Epic appears to recognize that its Sherman Act claims are limited to domestic conduct.

196. Epic's failure to carry its burden under the FTAIA has at least two consequences for this case. First, nothing that Apple is alleged to have done overseas is relevant to Apple's liability here—only its conduct within the United States need be considered. Second, any relief that Epic obtains must be limited to the United States for the same reason. If Epic prevails on liability and obtains injunctive relief, such injunctive relief *must* be limited, as a matter of law, to the United States. Foreign conduct that does not have an anticompetitive effect in the United States is beyond the scope of the Sherman Act, and thus cannot be enjoined pursuant to such a claim.

197. International comity also requires that the court not consider foreign conduct. *Hartford Fire Ins. Co. v. California*, 509 U.S. 764, 797–98 & n.24 (1993); *see also Unigestion Holdings, S.A. v. UPM Tech., Inc.*, 305 F. Supp. 3d 1134, 1145 (D. Or. 2018) (even where "the FTAIA does not bar the application of the Sherman Act," a "[c]ourt may still apply the principles of international comity").

198. Courts consider "several elements" in deciding whether to abstain from applying U.S. law to conduct occurring in other countries: (1) the degree of conflict with foreign law or policy; (2) the nationality or allegiance of the parties and the locations or principal places of business of corporations; (3) the extent to which enforcement by either state can be expected to achieve compliance; (4) the relative significance of effects on the United States as compared with those elsewhere; (5) the extent to which there is explicit purpose to harm or affect American commerce; (6) the foreseeability of such effect; (7) the relative importance to the violations charged of conduct within the United States as compared with conduct abroad. *Metro Indus. v. Sammi Corp.*, 82 F.3d 839, 846 (9th Cir. 1996).

199. Courts have recognized that "rampant extraterritorial application of U.S. law 'creates a serious risk of interference with a foreign nation's ability independently to regulate its own commercial affairs.'" *Motorola Mobility LLC v. AU Optronics Corp.*, 775 F.3d 816, 824 (7th Cir. 2015) (quoting *F. Hoffmann–La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 165 (2004)). This is particularly true in private antitrust actions, such as this one, because "private plaintiffs often are unwilling to exercise the degree of self-restraint and consideration of foreign governmental sensibilities generally exercised by the U.S. Government." Joseph P. Griffin, *Extraterritoriality in U.S. and EU Antitrust Enforcement*, 67 Antitrust L.J. 159, 194 (1999); *see also Empagran*, 542 U.S. at 171 (explaining how

and why the government, "unlike a private plaintiff," is empowered to seek broader remedies "to protect the public from further anticompetitive conduct and . . . harm").

200. Because Epic is seeking injunctive relief, and other countries have their own robust competition laws and enforcers, these concerns are even more acute. The Supreme Court has recognized that European competition law, for example, treats vertical restraints differently than U.S. antitrust law. *F. Hoffmann–La Roche Ltd. v. Empagran S.A.*, 542 U.S. 155, 167 (2004) (citing 2 W. Fugate, *Foreign Commerce and the Antitrust Laws* § 16.6 (5th ed. 1996)). Using U.S. law to proscribe conduct that is or may be lawful where it occurred risks violating the "golden rule among nations"—to "give the respect to the laws, policies and interests of others that [we] would have others give to [our] own in the same or similar circumstances." *Mujica v. AirScan Inc.*, 771 F.3d 580, 608 (9th Cir. 2014) (quotation marks omitted).

201. Accordingly, as under the FTAIA, international comity compels the Court to limit the focus of the case to domestic conduct, and any injunctive relief awarded to Epic must be confined to the United States.

B. Sherman Act Section 2 (Epic Counts 1, 2, and 4)

202. Epic brings two claims under Section 2 of the Sherman Act for unlawful monopoly maintenance. In Count 1, Epic alleges that Apple engaged in unlawful monopolization of the "iOS App Distribution Market" because it "prevents the distribution of iOS apps through means other than the App Store and prevents developers from distributing competing app stores to iOS users." Dkt. 1 ¶ 188. In Count 4, Epic alleges that Apple has a monopoly in the "iOS In-App Payment Processing Market" that it has unlawfully maintained by requiring "iOS developers that sell in-app content to exclusively use Apple's In-App Purchase." *Id.* ¶ 220.

203. Epic also has brought a claim under Section 2 of the Sherman Act that Apple has violated the Sherman Act "through its unlawful denial to Epic and other app distributors of an essential facility—access to iOS." Dkt. 1 ¶ 197.

204. A careful analysis of each of the elements of Epic's Section 2 claims makes clear that Epic's claims fail for numerous reasons. *See infra* §§ III.B.i–II.B.iii (¶¶ 216–419). Indeed, whereas Apple's arguments and defenses fit squarely within the established framework for Sherman Act claims, Epic urges the Court to sanction unprecedented expansions of the antitrust laws that are squarely foreclosed by binding precedent and antithetical to the animating purposes of the Sherman Act.

205. The principal authority on which Epic relies for its novel theories of Section 2 liability is *United States v. Microsoft*, 253 F.3d 34 (D.C. Cir. 2001), in which the D.C. Circuit partially affirmed a district court's liability findings (but vacated the remedy) regarding Microsoft's practice of discouraging users of Windows from using an Internet browser other than Microsoft's own Internet Explorer. *Microsoft* was decided two decades ago, in a different technological era and context, and by a different Circuit. And it does not support Epic's claims here.

206. Microsoft was accused of monopolizing the market for Intel-compatible PC operating systems through a variety of allegedly anticompetitive acts and contractual restrictions. *See United States v. Microsoft*, 253 F.3d 34, 47 (D.C. Cir. 2001). First, the plaintiffs challenged certain provisions in Microsoft's agreements licensing Windows to OEMs that prohibited OEMs from removing any desktop icons from Windows (including Microsoft's Internet Explorer), from altering the "boot sequence," or from otherwise altering the appearance of the Windows desktop, all of which had the effect of restraining OEMs' ability to replace Internet Explorer with a different Internet browser. *See id.* at 60–61. Second, the plaintiffs challenged the integration of Internet Explorer into Windows, which prevented OEMs from removing the browser. *See id.* at 64. Third, the plaintiffs challenged Microsoft's agreements with various Internet Access Providers that offered Internet Explorer at an attractive (below cost) price and that encouraged Internet Access Providers to promote Internet Explorer in exchange for better integration with Windows. *See id.* at 67–68. Fourth, the plaintiffs challenged various agreements Microsoft had with Internet Content Providers, Independent Software Vendors, and Apple to promote or require the usage of Internet Explorer on various platforms in exchange for technical information about upcoming Windows updates and upgrades. *See id.* at 71–72. And finally, the plaintiffs challenged steps that Microsoft had taken to obstruct the development of software that would threaten Microsoft's monopoly in operating systems. *See id.* at 74.

207. The D.C. Circuit found that much, although not all, of Microsoft's conduct had anticompetitive effects because it tended to exclude competition through coercive agreements and strategic restrictions, rather than through innovation or having the superior product. The D.C. Circuit also held that Microsoft failed in numerous places to offer any evidence of legitimate procompetitive justifications for its conduct. *See United States v. Microsoft*, 253 F.3d 34, 71–73, 76–77 (D.C. Cir. 2001). However, the Court vacated the relief ordered (divestiture) and remanded to a different judge for further proceedings. *See id.* at 97–118.

208. There are several distinguishing factors that make *Microsoft* largely inapplicable to this case.

209. *First*, unlike here, there was no single-brand market alleged in *Microsoft*. *See United States v. Microsoft*, 253 F.3d 34, 52 (D.C. Cir. 2001) (defining the market as "'the licensing of all Intel-compatible PC operating systems worldwide'"). The conduct challenged in *Microsoft* thus did not simply affect Microsoft's own products and intellectual property, but rather weakened the intellectual property rights of others and sought to control the market through anticompetitive conduct rather than through innovation. Here, by contrast, Apple developed an innovative operating system and transaction platform for use on *its* devices (and for *its* consumers), and the only anticompetitive conduct alleged relates to an alleged foreclosure of competition in the (inaccurately defined) market for *only* Apple products. The differing market scope makes *Microsoft* an inapt comparator.

210. *Second*, much of the challenged conduct involved Microsoft's efforts, through contractual and technical restrictions, to force third parties to use and sell its intellectual property. *See United States v. Microsoft Corp.*, 253 F.3d 34, 59–78 (D.C. Cir. 2001). Here, however, the facts are inverted—Apple is not *forcing* Epic to use its intellectual property; rather, Apple

makes that intellectual property available to Epic and other developers on transparent terms. Unlike in *Microsoft*, Epic is seeking to *compel* Apple to make its intellectual property available to it on terms dictated by Epic. The anticompetitive conduct alleged in *Microsoft* is far afield from the terms of access to Apple's own intellectual property that are at issue here.

211. *Third*, whereas Microsoft urged that its intellectual property rights (namely, its copyrights) gave it "an absolute and unfettered right to use its intellectual property as it wishes," *United States v. Microsoft Corp.*, 253 F.3d 34, 63 (D.C. Cir. 2001), Apple has made no such claim here. Rather, the crux of Apple's argument, detailed below, *see infra* § III.B.i.b (¶¶ 246–83), is that a patent or copyright holder has a right to *exclude* others from using its work, or to set terms and conditions for the licensing of that work. Microsoft sought to insulate itself from liability for all conduct related to the exercise of its intellectual property rights, whereas Apple has invoked only the indisputable maxim that a rights holder has the right to license or *not* license its work to others on terms that it sets.

212. The D.C. Circuit in *Microsoft* in fact supports Apple's legal arguments here, because the court recognized that a firm may take steps to protect its intellectual property. With respect to "[t]he only license restriction Microsoft seriously defend[ed] as necessary to prevent a 'substantial alteration' of its copyrighted work," the court *agreed* that such a restriction was "not an exclusionary practice that violates § 2 of the Sherman Act," because it validly protected Microsoft's copyright from being exploited by original equipment manufacturers. *United States v. Microsoft Corp.*, 253 F.3d 34, 63 (D.C. Cir. 2001). And the D.C. Circuit rejected the "second variation" of Microsoft's "copyright defense" only because Microsoft "never substantiate[d]" its claim that other restrictions were necessary to protect its intellectual property rights. *Id.* Thus, *Microsoft* actually *supports* the notion that a firm may take measures to protect its intellectual property rights from unlawful exploitation, provided that (as here) the firm introduces evidence to connect its intellectual property rights with the challenged conduct, which Microsoft did not do.

213. *Third*, the D.C. Circuit found in numerous places that Microsoft had failed to offer *any* procompetitive justifications for its conduct. *See United States v. Microsoft Corp.*, 253 F.3d 34, 72 (D.C. Cir. 2001) ("Microsoft had an opportunity to, but did not, present the District Court with evidence demonstrating that the exclusivity provisions have some such procompetitive justification."); *id.* at 74 ("Microsoft offers no procompetitive justification for the exclusive dealing arrangement."); *id.* at 76 ("Microsoft offered no procompetitive justification for the default clause . . . ."); *id.* at 77 ("Microsoft offers no procompetitive explanation for its campaign to deceive developers."); *id.* ("Microsoft does not . . . offer any procompetitive justification for pressuring Intel not to support cross-platform Java."). Here, by contrast, Apple has set forth a host of legitimate procompetitive justifications for its conduct, and there is no evidence that these justifications are pretextual. *See infra* § III.B.i.d (¶¶ 299–317), § III.B.ii.d (¶¶ 352–67). The complete absence of *any* procompetitive justifications for the conduct challenged in *Microsoft* distinguishes this case.

214. *Fourth*, the decision in *Microsoft* was issued at an early stage of the information economy, when the intersection between antitrust law and technology was still being explored.

Epic's expert, Dr. Evans, has himself argued that "the economic analysis presented in support of [the government's claim] was internally inconsistent, based on unsound economic theory, and conflicted with the facts." David S. Evans et al., *An Analysis of the Government's Economic Case in* U.S. v. Microsoft, The Antitrust Bulletin 163, 167 (2001). Dr. Evans has further criticized the absence of "evidence in the record that the actions the district court found unlawful had a material effect on Netscape's share of browser use, or significantly harmed consumers." *Id.*

215. In any event, anticompetitive conduct must necessarily be evaluated on the facts of the case—a blanket comparison to *Microsoft* and the host of anticompetitive conduct alleged there is inappropriate. That is made clear by the fact that the D.C. Circuit's chief criticism of Microsoft's case was its failure to offer any evidence of legitimate business justifications for its conduct. Instead, the proper course of analysis is to hold Epic to its burden of proof on *each* of the elements for *each* of its claims. That exercise confirms what the broad principles of antitrust law already make clear: There is *no* legal support for the novel and unwarranted expansion and reinterpretation of the antitrust laws that Epic urges here.

ii. Sherman Act Section 2 – Monopoly Maintenance in the "iOS App Distribution Market" (Epic Count 1)[9]

216. In Count 1, Epic alleges that Apple engaged in unlawful monopolization of the "iOS App Distribution Market" because it "prevents the distribution of iOS apps through means other than the App Store and prevents developers from distributing competing app stores to iOS users." Dkt. 1 ¶ 188.

217. In order to prevail on a claim of unlawful monopolization under Section 2 of the Sherman Act, a plaintiff must 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." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quotation marks omitted). Causal antitrust injury is an element common to all antitrust claims and is addressed above. *See supra* § III.A.iii (¶¶ 183–86).

218. As the Ninth Circuit recently explained, "proving an antitrust violation under [Section] 2 of the Sherman Act is more exacting than proving a [Section] 1 violation," and "a court [that] finds that the conduct in question is not anticompetitive under § 1 . . . need not separately analyze the conduct under § 2." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991–92 (9th Cir. 2020); *see also Williams v. I.B. Fischer Nev.*, 999 F.2d 445, 448 (9th Cir. 1993) (conduct that fails to establish a claim under Section 1 generally "cannot be used as the sole basis for a § 2 claim" (quotation marks omitted)); *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 543 (9th Cir. 1983) (conduct that could not support a Section 1 claim "is of no assistance" in attempt to state Section 2 claim), *overruled on other grounds by Hasbrouck v. Texaco, Inc.*, 842 F.2d 1034 (9th Cir. 1987).

[9] The elements of unlawful monopoly maintenance under Section 2 of the Sherman Act are addressed in § 7, page 51 of the Joint Elements Submission.

219. Because Count 1 and Count 3 (regarding unreasonable restraints on trade under Section 1) are premised on alleged restraints in "the [DPLA] and the terms of Apple's App Store Review Guidelines unreasonably" and their alleged effects on "competition in the iOS App Distribution Market," Dkt. 1 ¶ 211; *see also id.* ¶¶ 129–34 (Epic's overlapping allegations of alleged contractual restraints), Count 1 fails for the same reasons that Count 3 fails, *see infra* § III.C.ii (¶¶ 487–530).

220. In any event, Epic's Count 1 fails on its own terms.

b. Apple Lacks Monopoly Power[10]

221. Epic's unlawful monopolization claim fails at the outset because Apple lacks monopoly power (or market power) in the relevant product market: digital game transactions.

222. Monopoly power is "the power to control prices or exclude competition." *United States v. Grinnell Corp.*, 384 U.S. 563, 571 (1966) (quotation marks omitted). "[A] firm is a monopolist if it can profitably raise prices substantially above the competitive level," *United States v. Microsoft Corp.*, 253 F.3d 34, 51 (D.C. Cir. 2001), "without inducing so rapid and great an expansion of output from competing firms as to make the supracompetitive price untenable," *Harrison Aire, Inc. v. Aerostar Int'l, Inc.*, 423 F.3d 374, 380 (3d Cir. 2005) (quotation marks omitted).

223. Section 2 monopolization claims "must be judged on a market-by-market basis." *United States v. Syufy Enters.*, 903 F.2d 659, 672 n.22 (9th Cir. 1990); *see also Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 177 (1965) ("Without a definition of [the] market there is no way to measure [the defendant's] ability to lessen or destroy competition.").

224. A plaintiff can prove monopoly power directly or indirectly. *United States v. Microsoft*, 253 F.3d 34, 51 (D.C. Cir. 2001). "[D]irect evidence" of monopoly power includes "evidence of restricted output and supracompetitive prices." *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). "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." *Microsoft*, 253 F.3d at 51 (D.C. Cir. 2001) (citations omitted).

225. To show monopoly power using indirect evidence, 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." *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). The "Supreme Court has never found a party with less than 75% market share to have monopoly power." *Kolon Indus. Inc. v. E.I. DuPont de Nemours & Co.,* 748 F.3d 160, 174 (4th Cir. 2014).

[10] Monopoly power is addressed in § 7.1, pages 52–54 of the Joint Elements Submission.

226. Courts also consider "structural characteristics of markets in determining whether or not a firm has monopoly power, including the relevant size and strength of competitors, … probable development of the industry, . . . [and] potential competition." ABA Section of Antitrust Law, Antitrust Law Developments 236 (8th ed. 2017). For example, in two-sided platform markets "[i]ndirect network effects [] limit [a] platform's ability to raise overall prices and impose a check on its market power." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2281 (2018).

227. A dominant market share is not the same as market power, but rather may show "whether the defendant possesses sufficient leverage to influence marketwide output." *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1437 (9th Cir. 1995). "With a dominant share of the market's productive assets, a firm may have the market power to restrict marketwide output and, hence, increase prices, as its rivals may not have the capacity to increase their sales quickly to make up for the reduction by the dominant firm." *Id.*

228. Because "[a] mere showing of substantial or even dominant market share alone cannot establish market power sufficient to carry out a predatory scheme," Epic "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. v. Atl. Richfield Co.*, 51 F.3d 1421, 1438–39 & n.10 (9th Cir. 1995) ("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).

Apple Lacks Monopoly Power in the Relevant Market for Digital Game Transactions

229. There is no direct or indirect evidence indicating that Apple has monopoly power in the relevant market. As discussed above, *see supra* § II.B.ii (¶¶ 31–79), the relevant market is digital transactions between game app developers and consumers of game app content. And Apple does not own a dominant share of that market. Rather, Apple's share of the digital game transactions market is relatively small, between 23.3% and 37.5%. FOF ¶ 493.2. With no evidence of monopoly power or even market power, Epic's Section 2 monopolization claim fails at the start.

230. Nor is there any evidence of supracompetitive pricing that would constitute direct evidence of monopoly power. The commission Apple charges developers—generally 30%, and lower in many circumstances—is in line with other platforms that undisputedly compete with one another (and with Apple). *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). Many other platforms—including the largest competitors in the market for digital game transactions—have a similar payment structure and the same base level of commission. Most notable here, the app transaction platforms operated by Google and

Microsoft; the transaction platforms that are part of the Xbox, PlayStation, and Nintendo ecosystems; and Steam, the largest PC-game distribution platform, all charge a 30% base commission. FOF ¶ 472. In many ways, even Apple's 30% commission rate is actually *below* the competitive rate, because many of the platforms charging the same commission (including those through which Epic distributes *Fortnite*) do not provide the same services to developers or the nearly one billion consumers worldwide as Apple does. FOF ¶ 473.

231. Before the introduction of the App Store, software developers, including game app developers, received a smaller portion (at most, 30%) of the revenue share. FOF ¶ 469. Since then, competing transaction platforms and other competing services have entered the marketplace, including Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, online game streaming services, and, of course, EGS. FOF ¶ 494.1. In addition, many game streaming services, including Amazon Luna, Google Stadia, Microsoft xCloud, NVIDIA GeForce Now, and PlayStation Now, now compete with Apple. FOF ¶ 502.

232. Apple's profit margins do not establish monopoly power. "Many courts have disparaged the evidentiary value of high profits to indicate monopoly power." *High Tech. Careers v. San Jose Mercury News*, No. 90-CV-20579, 1995 WL 115480, at *3 (N.D. Cal. Mar. 14, 1995); *see also In re IBM Peripheral EDP Devices, Antitrust Litig.*, 481 F. Supp. 965, 981 (N.D. Cal. 1979) ("[T]he inference that a defendant that enjoys healthy profits only does so because of an unhealthy market structure is not a strong one."); *Forsyth v. Humana, Inc.*, 827 F. Supp. 1498, 1511 (D. Nev. 1993) ("[P]roof of excessive profits . . . may be misleading and subject to several interpretations."). That is because "competitive firms may be highly profitable merely by virtue of having low costs as a result of superior efficiency." *Blue Cross & Blue Shield United of Wis. v. Marshfield Clinic*, 65 F.3d 1406, 1412 (7th Cir. 1995).

233. Economic literature supports this skepticism. An economic methodology that focuses on "accounting profits or markups as an indicator of market power" is "far from ideal." Jonathan B. Baker & Timothy F. Bresnahan, *Empirical Methods of Identifying and Measuring Market Power*, 61 Antitrust L.J. 3, 5 (1992); *see also* Richard Schmalensee, *Another Look at Market Power*, 95 Harv. L. Rev. 1789, 1805 (1982) ("There are . . . serious problems with using profitability to gauge market power."). "[H]igh profits or margins might reflect efficiencies, such as low costs or superior product design, rather than market power." Baker & Bresnahan, *supra*, at 5. Moreover, "the way accountants spread costs over time and adjust asset values for depreciation frequently causes accounting measures of profit to bear little relation to those underlying economic concepts that might in principle be related to market power." *Id.*; *see also* Schmalensee, *supra*, at 1805 ("[I]t is very difficult in practice to measure actual profitability, and it may be even more difficult to measure excess profits."). "These problems loom so large that antitrust today does not rely heavily on profitability measures in making inferences about market power." Baker & Bresnahan, *supra*, at 5.

234. The commission rate of 12% that Epic has set for EGS does not prove that Apple's commission is supracompetitive. While Epic's commission is lower than Apple's, it does not offer all the services that Apple provides. EGS is essentially a storefront—it lacks the

integrated features that make the App Store a desirable platform for consumers and developers.

235. Likewise, the commission rates of payment processors identified by Epic are not evidence that Apple's commission is supracompetitive. Again, the benefits conferred by Apple in exchange for its commission are significant. It is not merely a "payment processing" fee—indeed, Epic's own CEO conceded that commissions paid to game app transaction platforms do not simply compensate for the cost of processing payments. FOF ¶ 251.3. Rather, in exchange for its commission, Apple provides developers a marketplace to transact with more than a billion consumers who trust the App Store and trust the content it offers. Apple also provides access to and use of its intellectual property, centralized and secure payment processing, bandwidth, customer service, programming, online stores, the platform (including security protections and operation of on-device functionality), development tools, constant marketing, reviews and curation of apps, tools for testing, campaign management, anti-fraud measures, and more. FOF ¶¶ 691–93. Apple has developed a comprehensive platform for the distribution of apps and facilitation of digital transactions between consumers and developers—its competitive commission rate represents Apple's commission for *all* of those services, not just the processing of payments for digital transactions.

236. Additionally, there is no evidence of "significant barriers to entry" or that "existing competitors lack the capacity to increase their output in the short run." *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). EGS, Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, and online game streaming services have all started to facilitate transactions for digital content following the creation of the App Store. FOF ¶¶ 494.1, 502. Given the entry of these competing platforms and streaming services, it is clear that there are no significant barriers to entry that would suggest market power or monopoly power. FOF ¶ 494.2

Apple Lacks Monopoly Power Even Under Epic's Erroneous Market Definition

237. Epic has posited a market definition that is restricted to the distribution of iOS apps—and that is not limited to game apps—essentially attempting to define the market in such a way as to vest Apple with a monopoly by definition.

238. Even under Epic's definition of the "iOS App Distribution" market, Apple lacks monopoly power for Section 2 purposes.

239. *First*, there is no evidence of restricted output or increased prices. *See Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1437 (9th Cir. 1995) ("With a dominant share of the market's productive assets, a firm may have the market power to restrict marketwide output and, hence, increase prices . . . ."). In fact, the evidence is squarely to the contrary. The App Store has grown by leaps and bounds since its creation in 2008, and continues to grow and evolve. FOF ¶ 575. Output—whether measured in terms of total apps or app transactions—has steadily increased. FOF ¶¶ 575–76. Meanwhile, the effective commission rate of the App Store has gone *down*, as Apple has offered certain categories

of developers lower commission rates. FOF ¶ 569. Apple has thus acted in the exact *opposite* way one would expect a monopolist to act—it has reduced prices and increased output.

240. *Second*, consumers and developers often "multi-home" across multiple devices and digital transaction platforms, meaning that they have access to games across a variety of devices, not just iOS-compatible devices. FOF ¶¶ 358–63. As discussed above, *see supra* § II.B.ii.a (¶¶ 39–45), this fact shows why Epic's market definition is unduly narrow; but it also shows that even if the market were construed as Epic proposes, Apple would lack market power because it is subject to competitive constraints.

241. Indeed, the fact that Apple charges the same 30% commission rate (and actually lower in many instances) that other app distributors and game app platforms do is evidence that these platforms compete with each other. According to Epic's (erroneous) application of the hypothetical monopolist test, Apple *could* raise the effective downstream prices to consumers by 5% and remain profitable, but Epic offers no persuasive reason for why Apple has not done so. The answer of course, is that Apple is constrained by competition.

242. *Third*, Apple's pricing also is constrained by other app distribution options available on iOS devices. Since the launch of the iPhone (and even before the App Store), developers have been able to offer web apps, accessible through the Safari web browser on the iPhone. FOF ¶ 548. That functionality was not removed with the launch of the App Store—developers still were (and are) able to offer web apps as an alternative (or in addition) to native iOS apps. *Id.* The DPLA acknowledges this, as it notes that "there is always the open Internet" for the distribution of apps. FOF ¶ 529.2 New game streaming services are beginning to take advantage of this feature to offer a variety of games to iOS users *without* going through the App Store. FOF ¶¶ 503.1–503.2. Indeed, *Fortnite* itself is expected to be available (through Nvidia's GeForce Now service) by the time trial starts in this case. FOF ¶ 542.1. The availability of these alternatives constrains Apple's market power in distributing native iOS apps through the App Store. FOF ¶ 504.

243. *Fourth*, consumers can and do switch away from iOS devices to Android devices. FOF ¶ 399.2. Consumers are not locked into iOS once they purchase an iPhone, and they can and do switch to phones with new operating systems with some frequency. *Id.* While switching devices is not as simple as switching shampoos, that does not mean there is no competition or that consumers are "locked in." *See, e.g.*, *Commercial Data Servers, Inc. v. Int'l Bus. Mach. Corp.*, 262 F. Supp. 2d 50, 69 (S.D.N.Y. 2003) ("The fact that existing IBM customers would need to spend money to migrate to another computing system does not establish 'lock-in.'"). No one would say, for instance, that two car companies do not compete with one another just because buying a new car is a substantial investment of resources. *See, e.g.*, *Town Sound & Custom Tops, Inc. v. Chrysler Motors Corp.*, 959 F.2d 468, 480 (3d Cir. 1992) (recognizing that "auto manufacturers are perfectly capable of producing functionally similar and competitive products" to one another). Consumers and developers have knowledge of the relative qualities and prices of the products ex ante (and Apple's commission has not gone up since the App Store was released) and can make informed purchasing decisions. And, like vehicles and many other commodities, phones

and operating systems have to be updated and replaced with at least some regularity, giving consumers periodic opportunities to reevaluate their purchasing decisions.

244. *Finally*, developers who choose to take advantage of Apple's proprietary tools and distribute apps through the App Store have access to alternative business models besides paid downloads and in-app purchases, constraining Apple's ability to charge supracompetitive prices for its services. Developers have many options for monetizing apps that avoid Apple's commission entirely, including selling in-app currency through other platforms (including on a web browser), selling subscriptions on other platforms, or using in-app advertising. FOF ¶ 93. The vast majority of apps—83%—on the App Store are free. FOF ¶ 551. While some developers may prefer to avoid in-app advertising, that alternative nonetheless restricts the commission rate that Apple can charge developers, dispelling the notion that it has unfettered dominion over the prices it charges through the App Store.

245. Thus, regardless of the proper market definition, Apple does not have market power (much less monopoly power) in any relevant product market, and Epic cannot prevail on its Section 2 monopolization claim.

c. Apple Has Not Engaged in Exclusionary Conduct with Respect to App Distribution[11]

246. Even assuming that Apple has monopoly power in a relevant product market, Epic's monopoly maintenance claim for the distribution of iOS apps nonetheless fails because Epic has failed to show that Apple is engaged in exclusionary conduct.

247. A plaintiff alleging a Section 2 monopolization claim must prove "the willful acquisition or maintenance of [monopoly] 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 (1966). The plaintiff must therefore show "anticompetitive abuse or leverage of monopoly power, or a predatory or exclusionary means of attempting to monopolize the relevant market." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quotation marks omitted).

248. In a Section 2 monopoly maintenance case, "the plaintiff is obliged to make out a prima facie case that the monopolist has engaged in 'exclusionary' conduct," and "[a]t that point the proof burden ordinarily shifts to the defendant to offer a 'justification' for the conduct." 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.). Once a plaintiff has already established a "prima facie case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a 'procompetitive justification' for its conduct." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (quoting *United States v. Microsoft,* 253 F.3d 34, 59 (D.C. Cir. 2001)). "[T]he burden does not shift to [the defendant] to provide such justifications unless and until the [plaintiff] meets its initial burden of proving

[11] The requirement of exclusionary conduct is addressed in §§ 7.2–7.2.1, pages 55–58 of the Joint Elements Submission.

anticompetitive harm." *Id.* at 996. Here Epic is unable to meet its initial burden of proving anticompetitive harm for a number of reasons.

The Technical Design of iOS Cannot Form the Basis for Antitrust Liability

249. Apple did not engage in exclusionary conduct by making the design decision to prevent sideloading of native apps onto iOS devices. The basis for Epic's Section 2 monopolization claim under Count 1 is that Apple has designed iOS in such a way as to prevent firms like Epic from offering a competing app store for the distribution of iOS apps, and has enforced those technical restrictions through the DPLA. *See* Dkt. 1 ¶¶ 184–92. Epic's allegations thus depend on the notion that Apple's design and implementation of its own intellectual property can constitute exclusionary conduct. That theory fails as a matter of law.

250. For purposes of establishing exclusionary conduct, "the introduction of technologically related products, even if incompatible with the products offered by competitors, is alone neither a predatory nor anticompetitive act." *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 544 (9th Cir. 1983), *overruled on other grounds by Hasbrouck v. Texaco, Inc.*, 842 F.2d 1034 (9th Cir. 1987); *see also United States v. Microsoft Corp.*, 253 F.3d 34, 65 (D.C. Cir. 2001) ("As a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm's product design changes.").

251. That is because "[a] monopolist, no less than any other competitor, is permitted and indeed encouraged to compete aggressively on the merits, and any success it may achieve solely through the process of invention and innovation is necessarily tolerated by the antitrust laws." *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 544–45 (9th Cir. 1983) (quotation marks omitted), *overruled on other grounds by Hasbrouck v. Texaco, Inc.*, 842 F.2d 1034 (9th Cir. 1987); *see also Cal. Computer Prods., Inc. v. Int'l Bus. Machs. Corp.*, 613 F.2d 727, 744 (9th Cir. 1979) (a market participant has "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").

252. Accordingly, as a matter of law, "a design change that improves a product by providing a new benefit to consumers does not violate Section 2 absent some associated anticompetitive conduct." *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 998–99 (9th Cir. 2010). "If a monopolist's design change is an improvement, it is necessarily tolerated by the antitrust laws, unless the monopolist abuses or leverages its monopoly power in some other way when introducing the product." *Id.* at 1000 (quotation marks and citation omitted). Apple's design of iOS and the App Store precluding third-party app stores (and the attendant problems of control and interoperability), in order to protect its own intellectual property, the reliability of the hardware and software, and the security and privacy of user data, is procompetitive.

253. In *United States v. Microsoft*, the court considered whether Microsoft was unlawfully maintaining a monopoly in the personal computer market through legal and technical restrictions that it had imposed on manufacturers and users. *See United States v. Microsoft Corp.*, 253 F.3d 34, 47 (D.C. Cir. 2001). As relevant here, the D.C. Circuit rejected the

argument that Microsoft engaged in anticompetitive conduct when it designed a Java Virtual Machine ("JVM"), which did not work with an operating system developed by a rival. *Id.* at 75. The court explained that "a monopolist does not violate the antitrust laws simply by developing a product that is incompatible with those of its rivals." *Id.*

254. Here, what Epic challenges is a technical design feature of iOS and the App Store, namely, Apple's "walled garden." Apple designed and built iOS and the App Store so that consumers could safely download, install, and operate apps from the App Store. FOF ¶¶ 68–75. This was a thoughtful and conscious design choice made by Apple, based on its decades of experience with macOS in the desktop environment. FOF ¶ 70. Apple sought to leverage that experience—and refine the macOS design for mobile phone use—by designing iOS with new security and reliability protections that would enhance consumers' experience. FOF ¶ 72. Indeed, this is one of the bases on which Apple *competes* with other digital transaction platforms.

255. The contractual and technical restrictions that Epic challenges as anticompetitive do not constitute exclusionary conduct as a matter of law. iOS has never allowed third-party app stores or sideloaded apps on iOS or the App Store. And Apple has not never allowed consumers to download native apps except through the App Store, but rather since its inception, the App Store has been designed to permit Apple to curate the flow of native apps to consumers. FOF ¶ 396. In fact, iOS prevented "sideloading" even *before* the App Store was launched. FOF ¶ 73. Distributing apps through the App Store also makes it feasible and efficient to apply and implement iOS updates, whereas third-party app stores would present continued problems of interoperability. As addressed in more detail below, *see infra* § III.B.i.d (¶¶ 299–317), that design feature offers many procompetitive benefits, including giving consumers a secure platform to download, install, and operate apps, and giving developers a reliable way to distribute apps to Apple's many consumers, FOF ¶¶ 581–95. Regardless of whether Epic believes these technical restrictions are the *only* way to benefit consumers, there is no question that consumers and developers alike derive benefits from the design of iOS and the App Store. And that fact alone means that those restrictions do not constitute exclusionary conduct.

Apple Has a Right to Set Terms of Access to Its Intellectual Property

256. The technical and contractual restrictions that Epic challenges also do not constitute exclusionary conduct because they are merely terms of a license to access and use Apple's proprietary intellectual property. All developers, including Epic, who wish to distribute apps through the App Store must sign the DPLA, which expressly grants developers "a limited license to use the Apple Software and Services provided to [developers] under this Program to develop and test [developer's] Applications on the terms and conditions set forth in this Agreement." FOF ¶ 103. The contract thus expressly contemplates that developers are seeking a "license" to use Apple's intellectual property. What Epic seeks to do through this lawsuit is to access and benefit from Apple's intellectual property for only a nominal developer fee of $99, rather than for the additional 30% commission rate it agreed to.

257. As the creator of iOS, as well as the SDKs, APIs, and other tools that work with iOS, Apple is not obliged to provide access to its intellectual property on the terms demanded by Epic and does not engage in exclusionary conduct when it sets terms of access to its intellectual property.

258. "[M]arket power does not 'impose on the intellectual property owner an obligation to license the use of that property to others.'" *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999) (quotation marks omitted). And because intellectual property carries "the legal right to refuse to license . . . , the existence of a predicate condition to a license agreement cannot state an antitrust violation." *Townshend v. Rockwell Int'l Corp.*, No. 99-CV-400, 2000 WL 433505, at *8 (N.D. Cal. Mar. 28, 2000). Epic must thus prove not just that Apple has imposed licensing terms, but also that the challenged restraints had an "*actual* [anticompetitive] effect on competition." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 989 (9th Cir. 2020) (quotation marks omitted).

259. iOS is protected by numerous intellectual property rights, and federal law authorizes Apple to exclude others from using those rights. If Apple chooses to allow third parties to access and use that intellectual property protecting iOS and the related hardware and software, it may establish the terms of such use. Apple has invested billions of dollars into the development of iOS and the App Store. FOF ¶ 169. It holds numerous intellectual property rights related to iOS, the app developer tools, the App Store, and the underlying hardware, and it has chosen to license certain of those rights out to developers for the purpose of growing the App Store and providing consumers the best experience. FOF ¶¶ 89.1–89.2. Developers who want to native iOS apps *must* use Apple's intellectual property in order for those apps to be compatible with iOS and usable for consumers. FOF ¶ 89. Apple grants developers a limited license for developers to use its intellectual property in the DPLA, but sets forth numerous terms and conditions on that access, including, for example, the requirement that developers not offer their apps through platforms that facilitate the "sideloading" of apps onto iPhones. FOF ¶¶ 105–107. All developers, including Epic, who wish to develop native apps for iOS must agree to those terms before Apple will license its intellectual property.

260. As a matter of law, Apple is permitted to set conditions for access to its intellectual property. *See Townshend v. Rockwell Int'l Corp.*, No. 99-CV-400, 2000 WL 433505, at *8 (N.D. Cal. Mar. 28, 2000). "[T]he antitrust laws do not negate the patentee's right to exclude others from patent property." *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999). "The commercial advantage gained by new technology and its statutory protection by patent do not convert the possessor thereof into a prohibited monopolist." *Abbott Labs. v. Brennan*, 952 F.2d 1346, 1354 (Fed. Cir. 1991).

261. A patent accordingly "empowers the owner to exact royalties as high as he can negotiate with the leverage of that monopoly," *Brulotte v. Thys Co.*, 379 U.S. 29, 33 (1964), and a patent owner may refuse to license an invention altogether, *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1216 (9th Cir. 1997) (noting that it could find "no reported case in which a court has imposed antitrust liability for a unilateral refusal to sell or license a patent").

262. Because Apple is not obliged to license its intellectual property *at all*, and is permitted to set terms and conditions on access to the intellectual property it does choose to license, it necessarily follows that Apple is not (and cannot be) required to license its intellectual property on terms that Epic believes would be more favorable to it. *See, e.g.*, U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Guidelines for the Licensing of Intellectual Property* § 2.1 (2017) ("The antitrust laws generally do not impose liability upon a firm for a unilateral refusal to assist its competitors, in part because doing so may undermine incentives for investment and innovation.").

Apple Has No Duty to Deal on Terms Demanded by Epic

263. Epic's theory of exclusionary conduct fails for an additional, independent reason: Apple cannot be held to have engaged in exclusionary conduct based on a refusal to deal with Epic on its preferred terms, i.e., a claim that Apple is obliged to deal with its competitors (or would-be competitors) so as not to foreclose competition in the relevant market.

264. As a general matter, a firm does not engage in exclusionary conduct merely because it elects not to deal with a competitor, or elects not to deal with a competitor on that competitor's preferred terms. *See Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004). "[T]here is no duty to deal under the terms and conditions preferred by a competitor's rivals." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) (alteration and quotation marks omitted). Without such a duty, any claim premised on a rival's refusal to cooperate with the plaintiff necessarily fails for lack of exclusionary conduct. *See Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 451 (2009). And so long as "a firm has no antitrust duty to deal with its competitors . . . , it certainly has no duty to deal under terms and conditions that the rivals find commercially advantageous." *Id.* at 450.

265. The only possible exception arises under *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585 (1985), in which the defendant, who owned three out of the four ski resorts in the relevant market, discontinued a joint lift-ticket package with its lone competitor and then refused to sell the competitor any lift tickets for the purpose of bundling lift tickets. *Id.* at 592–94. *Aspen Skiing*—like all of Epic's theories of liability—is at the outer bounds of antitrust law. *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004) ("*Aspen Skiing* is at or near the outer boundary of § 2 liability."). It provides only a "limited exception" to the general rule that firms have no obligation to deal with their rivals.

266. As an initial matter, of course, Apple has *not* refused to deal with Epic. It has removed the *Fortnite* app from the App Store and expelled Epic from the developer program for breach of the DPLA and the App Store Review Guidelines, which are rules that apply to all developers. FOF ¶ 106. Apple has represented in open court that it would accept Epic back into the developer program if Epic reversed the changes to *Fortnite* and agreed to abide by the terms of the DPLA. *See* Hr'g Tr. 22:20–23:1 (Aug. 24, 2020). Apple simply has refused to deal under the terms unilaterally demanded by Epic.

267. In any event, to establish a duty to deal under *Aspen Skiing*, a plaintiff must prove at a minimum that (1) there was a unilateral termination prior, long-term, and profitable voluntary course of dealing with the plaintiff on terms comparable to those that it now demands; (2) that "the only conceivable rationale or purpose" for terminating that course of dealing "is 'to sacrifice short-term benefits in order to obtain higher profits in the long run from the exclusion of competition'"; and (3) "the refusal to deal involves products that the defendant already sells in the existing market to other similarly situated customers." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016); *see also FTC v. Qualcomm Inc.*, 935 F.3d 752, 755 (9th Cir. 2019) ("The Supreme Court recognized a very limited exception to that general rule [of no duty to deal] when a monopolist terminated a voluntary and profitable course of dealing with a competitor and sacrificed short-term benefits to exclude competition in the long run.").

268. To satisfy the first element, Epic must prove that a preexisting course of dealing was both profitable to Apple and operated for a long term. *See, e.g.*, *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004) (dismissing claim because the defendant had not "voluntarily engaged in a course of dealing with its rivals"). And Epic must further prove that Apple refused to continue to do business on the parties' preexisting terms. *See Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016). Absent proof that Apple offers the services at issue on the terms demanded by Epic "in the existing market to other similarly situated customers," there is no basis to show that Apple has "single[d] out" Epic "for anticompetitive treatment." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 994–95 (9th Cir. 2020) (quotation marks omitted).

269. Epic has made no effort to satisfy the first element. The App Store has been a "walled garden" since its inception in 2008. FOF ¶ 396. Apple has never offered to Epic or any other developer unfettered access to iOS to distribute apps. At all times, native iOS apps have been distributed through the App Store. Apple thus has not deviated from a preexisting course of dealing, a required element of any refusal-to-deal claim.

270. To satisfy the second element of a duty to deal, Epic must prove that Apple's refusal to assist Epic was "irrational but for its anticompetitive effect." *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1075 (10th Cir. 2013) (Gorsuch, J.). This requires proof not only that Apple "decided to forsake short-term profits," but also that its "refusal to deal was part of a larger anticompetitive enterprise, such as . . . seeking to drive a rival from the market or discipline it for daring to compete on price." *Id.*

271. Epic has adduced no evidence that Apple's conduct sacrificed short-term profits in favor of a long-term anticompetitive advantage. That is, there is no evidence that the contractual or technical restrictions challenged have the effect of reducing Apple's profits in the short-term so that it may obtain an anticompetitive advantage for a long period of time. And as detailed below, there are numerous procompetitive business justifications for the curated design of the App Store. Absent affirmative evidence from Epic *excluding* the possibility of any procompetitive justifications for the design of the App Store, Epic's refusal-to-deal claim fails.

272. Nor can Epic prove the third element of a duty to deal—that the alleged refusal involves products that Apple already sells into the market to other similarly situated customers. In *FTC v. Qualcomm Inc.*, 969 F.3d 974 (9th Cir. 2020), the Ninth Circuit held that there was duty to deal because there was "no evidence that Qualcomm singles out any specific chip supplier for anticompetitive treatment." *Id.* at 995. Similarly, here, Epic has not alleged that Apple has singled it out for anticompetitive treatment—it protests only the standard licensing terms applicable to all developers.

273. Epic has thus satisfied none of the elements for establishing a duty to deal, and its claim of exclusionary conduct thus cannot rest on that theory.

Epic's Framing of a "Conditional Refusal-to-Deal" Does Not Alter the Analysis

274. Seeking to sidestep the mountain of precedent against it, Epic argues that it is *not* bringing a duty-to-deal, refusal-to-deal, or a compulsory licensing claim. Instead, its expert claims that Epic has alleged a tying arrangement or a "conditional refusal-to-deal." However Epic's claim is framed, it asks the Court to prohibit Apple from exercising its right to choose with whom it will deal and on what terms. Basic antitrust principles prohibit such a claim except in the narrow circumstances already addressed above.

275. A "conditional refusal to deal" is not a discrete theory in antitrust law; rather, it is a term sometimes used in academic literature to refer to "tying and exclusive dealings." *Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 453 (7th Cir. 2020) ("[T]ying and exclusive dealing are two common examples" of "conditional refusals to deal" (quotation marks omitted)). Epic does not assert an exclusive dealing theory, and thus its "conditional refusal to deal" label adds nothing to its tying claim. Neither the Supreme Court nor the Ninth Circuit has recognized a discrete antitrust theory of "conditional refusal to deal," much less affirmed the imposition of liability under such a theory. Once again, Epic is beyond the boundaries of established law.

276. Moreover, framing the claim as a "conditional refusal to deal" does not mean the law regarding refusals to deal is inapplicable. The general rule—subject only to the limited exception outlined above—is that "businesses are free to choose the parties with whom they will deal, *as well as the prices, terms and conditions of that dealing*." *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 448 (2009); *see also Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) ("[T]here is no duty to deal under the terms and conditions preferred by a competitor's rivals." (alteration and quotation marks omitted)). *Aspen Skiing* is the "one, limited exception to this general rule." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 993 (9th Cir. 2020). The law regarding refusal to deal thus encompasses a claim of the type urged here—a desire to *change* the terms on which a licensee does business with its competitors.

277. The Ninth Circuit, in fact, has rejected efforts to extend refusal-to-deal liability beyond the narrow confines of *Aspen Skiing*, expressing "caution about using the antitrust laws to remedy what are essentially contractual disputes between private parties engaged in the pursuit of technological innovation." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 997 (9th Cir.

2020). The Court thus rejected the invitation to "adopt an additional exception, beyond the *Aspen Skiing* exception that the [plaintiff] concede[d] does not apply here, to the general rule that businesses are free to choose the parties with whom they will deal, as well as the prices, terms, and conditions of that dealing." *Id.* (quotation marks omitted).

278. What Epic apparently alleges is that Apple must be compelled to make iOS interoperable with third-party app stores (in particular, EGS), but a "company has no general legal duty to assist its competitors, including by making its product interoperable, licensing to competitors, or sharing information with its competitors." Final Jury Instructions at 19, *The Apple iPod iTunes Antitrust Litig.*, No. 05-CV-37-YGR (N.D. Cal. Dec. 15, 2014). However it describes its theory of liability, Epic's claims, if accepted, would require Apple to make affirmative changes to the design of iOS to make it compatible and interoperable with third-party app stores, essentially, a demand that Apple alter its conduct to *assist* Epic. *See Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1079 (10th Cir. 2013) (Gorsuch, J.) ("Whether one chooses to call a monopolist's refusal to deal with a rival an act or omission, interference or withdrawal of assistance, the substance is the same and it must be analyzed under the [refusal-to-deal] test we have outlined.").

279. The Tenth Circuit rejected a similar theory of liability in *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064 (10th Cir. 2013) (Gorsuch, J.). There, the plaintiff alleged that Microsoft had engaged in anticompetitive conduct by not giving software developers (including the plaintiff) access to "namespace extensions," which would have made it easier for developers to design software that would be fully interoperable with Microsoft Windows. *See id.* at 1068–69. The district judge granted judgment as a matter of law and the Tenth Circuit affirmed, applying the test from *Aspen Skiing* and rejecting the plaintiff's attempt to avoid the demanding test for refusal-to-deal liability by recasting its claim as one for "an 'affirmative' act of interference with a rival." *Id.* at 1078. "Traditional refusal to deal doctrine," the Tenth Circuit explained, "is not so easily evaded." *Id.*

280. Consistent with this precedent, courts have held that forcing a firm to make its products interoperable with a competitor's is *anti*competitive, not procompetitive. That is because the "creation of technological incompatibilities, without more, does not foreclose competition; rather, it increases competition by providing consumers with a choice among differing technologies, advanced and standard, and by providing competing manufacturers the incentive to enter the new product market by developing similar products of advanced technology." *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 542 (9th Cir. 1983).

281. Since the admonition in *linkLine* that firms have "no duty to deal under terms and conditions that the rivals find commercially advantageous," *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 448 (2009), no court has upheld an antitrust claim on the theory that a firm has an obligation to make its platform interoperable with the products of its rivals, as Epic demands here. Just the contrary, courts have consistently held that absent a duty to deal, a firm is free to design its products as essentially "walled gardens" that, like iOS, are not open for use by other firms except on specified terms. *See Bookhouse of Stuyvesant Plaza, Inc. v. Amazon.com, Inc.*, 985 F. Supp. 2d 612, 617, 623 (S.D.N.Y. 2013) (dismissing monopolization claim premised on Amazon's decision to manage its digital

rights such that only books downloaded from Amazon could be read on a Kindle device); *MiniFrame Ltd. v. Microsoft Corp.*, No. 11-CV-7419, 2013 WL 1385704, at *3, *5 (S.D.N.Y. Mar. 28, 2013) (dismissing monopolization claim based on Microsoft's change to the Windows licensing agreement that rendered a competitor's previously interoperable product incompatible with Windows), *aff'd*, 551 F. App'x 1 (2d Cir. 2013). As a leading treatise on intellectual property and antitrust explains, although "[o]ne might . . . imagine that an antitrust argument could be constructed against the use of proprietary interfaces" like iOS because of the power such an interface might over a market in complementary goods, "[w]e are aware of no such antitrust case," and "we think no successful antitrust claim along these lines is possible." Herbert Hovenkamp et al., *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property* § 12.03[D][1] (3rd ed. 2020 supp.). "The reason has to do with intellectual property. . . . If an interface is itself patentable or copyrightable, compelling access to that interface would present a fundamental conflict between the antitrust and intellectual property regimes because it would compel the licensing of an intellectual property right itself." *Id.*

282. Epic's contention that it seeks a right *not* to deal with Apple is incorrect. Epic wants to continue to have access to iOS itself, as well as the IP-protected SDK and thousands of APIs that it and numerous other developers have used to develop iOS-compatible apps. It wants to continue to have access to Apple's substantial consumer base. It wants to compel Apple to make iOS compatible with apps distributed through EGS. Epic thus wants to *require* Apple to continue to do business with it, but demands that the Court dictate the terms of that arrangement. And the terms that Epic demands are that Apple provide all of these benefits for nothing more than a nominal developer fee, and without otherwise having the ability to set any terms or conditions for the use of its intellectual property. That is evident from Epic's temporary restraining order and preliminary injunction applications, which sought to enjoin Apple from *terminating* its contracts with Epic. *See* Dkts. 17, 61. Clearly, what Epic seeks is not a right to *not* deal with Apple, but an order directing Apple to deal with Epic on the terms Epic desires. But without a duty to deal, Apple cannot be compelled to do so.

283. Because Apple has no duty to deal with Epic in the first place—much less a duty to alter the terms of its license agreement or its business model to accommodate Epic's preferred terms of access—it has not engaged in exclusionary conduct that would give rise to a Section 2 monopolization claim.

d. Apple's Conduct with Respect to App Distribution Does Not Have Anticompetitive Effects[12]

284. Epic's monopoly maintenance claim fails for the additional reason that there is no evidence that the challenged conduct has anticompetitive effects. As the Ninth Circuit has explained, "[t]o be condemned as exclusionary, a monopolist's act must have an 'anticompetitive effect.'" *FTC v. Qualcomm, Inc.*, 969 F.3d 974, 990 (9th Cir. 2020) (quoting *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001)). Anticompetitive effects are those

[12] The requirement of anticompetitive effects is addressed in § 7.2.2, pages 59–61 of the Joint Elements Submission.

that "harm the competitive *process* and thereby harm consumers. In contrast, harm to one or more *competitors* will not suffice." *Id.* (quotation marks and citation omitted). As discussed above, the conduct on which Epic relies for its antitrust claims cannot be considered anticompetitive or exclusionary, and thus cannot have anticompetitive effects.

285. The plaintiff bears the burden of proving "that the monopolist's conduct indeed has the requisite anticompetitive effect." *United States v. Microsoft Corp.*, 253 F.3d 34, 58–59 (D.C. Cir. 2001). As a matter of law, "a plaintiff may not use *indirect* evidence to prove unlawful monopoly maintenance via anticompetitive conduct under § 2." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (emphasis in original). Courts "will not infer competitive injury from price and output data absent some evidence that tends to prove that output was restricted or prices were above a competitive level." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2288 (2018) (quotation marks omitted).

286. Evidence of anticompetitive effects includes "proof of actual detrimental effects on competition, such as reduced output, increased prices, or decreased quality in the relevant market." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018) (quotation marks, alteration, and citation omitted). Epic cannot prove any of these, as set forth below—output has increased, prices have remained stable or declined, and quality has improved in *any* market proposed by the parties or their experts in this case.

287. Accordingly, Epic "must show that diminished consumer choices and increased prices are the result of a less competitive market due to either artificial restraints or predatory and exclusionary conduct." *FTC v. Qualcomm, Inc.*, 969 F.3d 974, 990 (9th Cir. 2020). To suffice, anticompetitive effects must be "significant and more-than-temporary." *Am. Prof'l Testing Serv., Inc. v. Harcourt Brace Jovanovich Legal & Prof'l Publ'ns, Inc.*, 108 F.3d 1147, 1151 (9th Cir. 1997) (quotation marks omitted).

288. In markets that include two-sided transaction platforms, courts must consider "indirect network effects and interconnected pricing and demand," because "[e]vidence of a price increase on one side of a two-sided transaction platform cannot by itself demonstrate an anticompetitive exercise of market power," as the defendant's "business model [may] spur[] robust interbrand competition and . . . increase[] the quality and quantity of [relevant] transactions" when both sides of the market are considered. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286–87, 2290 (2018).

289. "[I]n assessing alleged antitrust injuries, courts must focus on anticompetitive effects 'in the market where competition is [allegedly] being restrained.'" *FTC v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020) (quoting *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1057 (9th Cir. 1999)).

290. Under the proper market—digital transactions between game app developers and consumers of game app content—Epic has not even *attempted* to make any showing of anticompetitive effects.

291. Even under its erroneous market definition, however, Epic has not met its burden of showing that Apple's conduct has any anticompetitive effect. Rather, the design of iOS

and the App Store *encourages* competition. *See Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2282 (2018) (recognizing that a defendant's use of "a different business model" is procompetitive where it spurs "competitive innovations," increases output, and "improv[es] the quality of the services"). As set forth below, iOS and the App Store have *increased* output, *lowered* prices over time, and *improved* quality.

292. *First*, there is no evidence of reduced output. Rather, the evidence shows that output has dramatically increased, not decreased, over the years. FOF ¶¶ 575–77. Instead of restricting output, the App Store's business model and the emergence of new competitors have created a market for digital transactions that continues to grow by leaps and bounds each year. *Id.* Total consumer spending on digital game transactions also has increased over time. FOF ¶ 575. The success of the market for digital game transactions belies the assertion that iOS or the App Store has unduly constrained competition.

293. *Second*, prices have not increased. The vast majority of apps—83%—on the App Store are entirely free, and thus digital transactions associated with those apps cost nothing. The design of the App Store has encouraged developers to move from paid-to-download apps to free-to-download apps with paid-for premium content, effectively reducing the price consumers must pay to access apps. FOF ¶¶ 570–71. Apple's commission rates for digital game transactions are in line with those charged by other game app transaction platforms, and in fact, Apple has lowered its commission rate several times.

294. The fact that Epic and other developers are required to pay a commission to Apple for use of its intellectual property does not render iOS's design anticompetitive. In *Qualcomm*, the Federal Trade Commission contended that Qualcomm violated the Sherman Act by unreasonably restraining trade in, and unlawfully monopolizing, the cellular modem chip market. *See FTC v. Qualcomm Inc.*, 969 F.3d 974, 990 (9th Cir. 2020). Among other things, the FTC challenged Qualcomm's patent-licensing royalties and its "'no license, no chips'" policy, "under which Qualcomm refuses to sell modem chips to OEMs that do not take licenses to practice Qualcomm's [patents]." *Id.* at 985. The Ninth Circuit held, however, that none of the OEMs challenging the conduct had "articulated a cogent theory of anticompetitive harm" from the challenged conduct, noting that the OEMs had instead only "objected to Qualcomm's licensing royalty rates, which they have to pay *regardless* of whether they chose to purchase their chips from Qualcomm or a competitor." *Id.* at 1001. The same is true here—Epic must pay Apple for use of iOS and other proprietary resources, regardless of whether iOS is designed as a "walled garden" or not.

295. *Third*, there has been no decrease in quality. Instead, the quality of apps offered through the App Store has improved over time. There is a great variety today of technologically sophisticated games on the App Store now, demonstrating an increase in quality over time. FOF ¶ 577. [redacted]

296. *Finally*, far from being *anti*competitive, the App Store has spurred innovation at competing firms. Since the introduction of the App Store, Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, console marketplaces, online

game streaming services, and EGS have all emerged as competitors in the market for digital transactions on game apps. FOF ¶¶ 494.1–494.2. Moreover, many game streaming services, such as Amazon Luna, Google Stadia, Microsoft xCloud, Nvidia GeForce Now, and PlayStation Now, have entered the market. FOF ¶¶ 245–245.5.

297. Not only has the introduction of the App Store spurred competitive innovations, it also has increased the quality of products in the relevant market. After Apple pioneered security protocols as part of iOS and the App Store, other platforms have followed suit, adopting similar security measures in recognition of their importance to consumers. FOF ¶¶ 142–43. Consumers thus enjoy a safer experience than they would have if the use of uncurated native apps was the norm for these various devices.

298. In short, the evidence shows that Apple's conduct does not have an anticompetitive effect in any relevant market.

e. Any Allegedly Anticompetitive Conduct Is "Redeemed" by a Multitude of Procompetitive Business Justifications[13]

299. Even if Epic were capable of prevailing over the preceding hurdles, Apple has proffered a number of procompetitive justifications for its conduct here. In a Section 2 monopoly maintenance case, "the plaintiff is obliged to make out a prima facie case that the monopolist has engaged in 'exclusionary' conduct," and "[a]t that point the proof burden ordinarily shifts to the defendant to offer a 'justification' for the conduct." 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 658f (4th ed. 2020 supp.). Thus, once a plaintiff has already established a "*prima facie* case under § 2 by demonstrating anticompetitive effect, then the monopolist may proffer a 'procompetitive justification' for its conduct." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (quoting *United States v. Microsoft,* 253 F.3d 34, 59 (D.C. Cir. 2001)). But importantly, "the burden does not shift to [the defendant] to provide such justifications unless and until the [plaintiff] meets its initial burden of proving anticompetitive harm." *Id.* at 996.

300. An "antitrust defendant's conduct is redeemed by a legitimate business purpose." *Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258 (9th Cir. 1990). Accordingly, there can be no "antitrust liability if there was a legitimate business justification" for the defendant's conduct. *Oahu Gas Serv., Inc. v. Pac. Res. Inc.*, 838 F.2d 360, 369 (9th Cir. 1988). Apple's demonstrated legitimate business purposes therefore preclude liability for Epic's claims.

301. In a case such as this, however, where a plaintiff's claim is premised on the purported refusal by the defendant to deal with the plaintiff on the terms preferred by the plaintiff, it is the *plaintiff's* burden to affirmatively establish that there was *no* legitimate business reason for the defendant to refuse to deal with the plaintiff on the plaintiff's preferred terms. *See FTC v. Qualcomm Inc.*, 969 F.3d 974, 994 (9th Cir. 2020) (noting that "[n]othing in

[13] Procompetitive business justifications are addressed in §§ 7.2.3–7.2.5, pages 62–66 of the Joint Elements Submission.

the record or in the district court's factual findings rebuts" defendant's legitimate business justifications). Thus, a prior course of dealing cannot be "irrational" for purposes of a refusal-to-deal claim if the defendant acted for a legitimate business reason. *See Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1075 (10th Cir. 2013) (Gorsuch, J.) (quotation marks omitted).

302. Regardless of which party bears the burden at this stage, however, there are numerous procompetitive justifications for the design of iOS and the App Store, including its limitations on the distribution of apps outside of the App Store.

303. There are many types of procompetitive justifications. For example, a defendant's conduct is justified if undertaken to "enhance[] the quality or attractiveness of a product, increase[] efficiency by reducing costs or otherwise benefit[] consumers." *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1220 n.12 (9th Cir. 1997) (quotation marks omitted). "[A] different business model" that spurs "competitive innovations," increasing output and "improving the quality of the services" is also procompetitive. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2282 (2018).

Consumer Safety and Security

304. Ensuring consumer safety or improving product security and privacy are legitimate business justifications for a firm's conduct. *See Cont'l T. V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 55 n.23 (1977).

305. Apple's conduct is justified by its interest in ensuring consumer safety or improving product security, privacy, and reliability. Part of the consumer experience that Apple provides is its protection of consumer safety, security, privacy, and reliability, and consumers choose Apple because of its commitment to protecting consumers' safety, security, privacy, and reliability. Apple continues to invest in protecting consumer safety security, and reliability. FOF ¶ 581. Malicious apps in non-iOS app stores present severe security issues for non-iOS devices, in addition to, for example, causing crashes or other reliability problems. FOF ¶ 74.5. In light of this risk, Apple has invested considerable resources to ensure that the App Store is the most trusted place to download apps. FOF ¶¶ 582–86. Epic itself has recognized that consumers place a very high value on safety and safeguarding users from malware and privacy breaches. FOF ¶ 590.

306. The security provided by the technical design of iOS also benefits developers. Because Apple puts its reputation behind apps distributed through the App Store, the requirement that every app be reviewed and distributed through the App Store provides credibility to developers. FOF ¶ 587. Consumers trust Apple and are more willing to take a chance on newer and smaller developers. *Id.* If a developer circumvents the app review process, that has the potential to hurt *all other developers* who distribute apps via the App Store because users' confidence in iOS apps could be undermined by a poor experience with an app containing malware or that is otherwise unsuitable for distribution through the App Store. FOF ¶ 588.

Maintaining Quality and Improving Ease of Access

307. Maintaining or improving the quality of a product or service is a legitimate business justification. *See Cal. Computer Prods., Inc. v. Int'l Bus. Machs. Corp.,* 613 F.2d 727, 744 (9th Cir. 1979); *Data Gen. v. Grumman Sys. Support Corp.*, 36 F.3d 1147, 1183 (1st Cir. 1994). Likewise, improving the ease with which consumers can use a service is a legitimate business justification. *See In re Payment Card Interchange Fee & Merch. Discount Antitrust Litig.,* 986 F. Supp. 2d 207, 228 (E.D.N.Y. 2013), *rev'd on other grounds*, 827 F.3d 223 (2d Cir. 2016).

308. Apple has a legitimate interest in maintaining or improving the quality of its services. Here, Apple's conduct reflects a consistent prioritization of its consumers and the quality of service *they* receive from the App Store. FOF ¶ 581. The App Store provides a seamless, user-friendly experience in which the downloaded apps actually work on consumers' devices. FOF ¶ 582. And the App Store's curation of apps helps consumers find these quality apps in a one-stop shop. Because the App Store is the only place that distributes native iOS apps to iOS users, the confidence that users feel in downloading apps from the App Store proliferates to the entire iOS ecosystem. FOF ¶ 587. By excluding from the iOS ecosystem any apps that fail the app-review process, Apple serves an important certification role that gives users confidence that they can safely download apps onto their iPhones.

Broadening Consumer Choice and Increasing Output

309. Broadening consumer choice is a legitimate business justification. *See Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1157 (9th Cir. 2003). Increasing output also is a legitimate business justification. *See Law v. Nat'l Collegiate Athletic Ass'n*, 134 F.3d 1010, 1023 (10th Cir. 1998).

310. Apple's conduct is justified because it has broadened consumer choice and increased output. As discussed, *see supra* § III.B.i.c (¶ 292), the App Store's launch facilitated the rapid proliferation of apps, including game apps. At its launch, the App Store's U.S. storefront provided 452 third-party apps by 312 distinct developers. FOF ¶ 219. In that first year alone of operation, consumers made 603 million downloads of third-party apps. FOF ¶ 224.1. As of 2020, there are approximately 1.8 million apps in the App Store, with billions of downloads of apps. FOF ¶ 467.3. Because of the App Store, consumers now have access to millions of third-party apps in a safe and secure environment.

Enhancing Interbrand Competition

311. Increasing interbrand competition is a legitimate business justification. *See Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 890 (2007) ("The promotion of interbrand competition is important because the primary purpose of the antitrust laws is to protect this type of competition." (alteration and quotation marks omitted)); *see also Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1180 n.2 (9th Cir. 2016) (describing "the enhancement of Interbrand competition" as a "well-recognized economic benefit[]" (quotation marks omitted)).

312. Apple's "walled garden" is part of what allows it to differentiate itself from other operating systems like Android. Android devices, unlike Apple, typically allow sideloading and third-party app stores. FOF ¶ 74.1. A consumer choosing which device to purchase thus can choose between Apple, with its more *secure* operating system on the one hand, and Android, with its more *open* operating system on the other. Likewise, developers can choose between prioritizing apps for Apple and Android based on the same preferences. This differentiation thus increases competition between Apple and Android, because it gives consumers a meaningful point of comparison that allows them to purchase a device tailored to their preferences.

Protecting Intellectual Property and Preventing Free-Riding

313. Protecting a firm's proprietary information and intellectual property and preventing free-riding are legitimate business justifications. *See Gorlick Distrib. Ctrs., LLC v. Car Sound Exhaust Sys., Inc.*, 723 F.3d 1019, 1026 (9th Cir. 2013); *Technical Res. Servs., Inc. v. Dornier Med. Sys., Inc.*, 134 F.3d 1458, 1467 (11th Cir. 1998); *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 461 (1992).

314. Similarly, a firm's desire to exclude others, or profit from, its intellectual property is a presumptively legitimate and procompetitive business justification. *See Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1219 (9th Cir. 1997).

315. At bottom, Epic's claims center on Apple's refusal to license its intellectual property to Epic on terms that Epic would prefer. iOS, and the multitude of developer tools that Apple licenses through the terms Epic has challenged, are the subject of numerous patents and trademarks. [FOF]. As set forth above, Apple has no antitrust duty to share its intellectual property with Epic, and Apple also "certainly has no duty to deal under terms and conditions that [Epic] find[s] commercially advantageous." *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 450 (2009). Antitrust claims premised on an intellectual property owner's refusal to license threaten the very purposes of intellectual property *and* antitrust law. "[S]uch claims will detract from the advantages lawfully granted to the holders of patents or copyrights by subjecting them to the cost and risk of lawsuits based upon the effect, on an arguably separate market, of their refusal to sell or license. The cost of such suits will reduce a patent holder's incentive . . . to risk the often enormous costs in terms of time, research, and development. Such an effect on patent and copyright holders is contrary to the fundamental and complementary purposes of both the intellectual property and antitrust laws, which aim to encourag[e] innovation, industry and competition." *See Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1218 (9th Cir. 1997)

316. The design of iOS protects Apple's proprietary information and intellectual property, and prevents free-riding. Apple has invested billions of dollars in the development of iOS and the App Store. FOF ¶ 169. It also has made available a variety of tools to developers to help them design iOS-compatible apps for distribution through the App Store. Without the "walled garden" design of the App Store, developers could exploit Apple's intellectual property and free-ride on its success and innovation by bypassing Apple altogether. In fact, conditions on the terms of an intellectual property license are an integral part of a

procompetitive intellectual property licensing arrangement, because they allow valuable intellectual property rights to be shared among complementary businesses while still incentivizing innovation by other firms by foreclosing freeriding. FOF ¶ 598. Apple's business desire to reap the benefits of the software and system that it built is inherently procompetitive.

317. Apple has proffered several valid, procompetitive justifications for its design of iOS and the App Store. The "technical and contractual restrictions" that Epic challenges actually improve the consumers' overall experience on the App Store and protect their safety, security, and privacy.

f. Apple's Procompetitive Justifications Are Not Pretextual

318. Because Apple has proffered procompetitive justifications for its conduct, Epic may prevail on a claim under Section 2 only if it demonstrates that *each* of Apple's proffered procompetitive justifications is invalid or pretextual. *See Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258–59 & n.4 (9th Cir. 1990). It has not done so.

319. Epic bears the burden of proving that Apple's "conduct [was not] redeemed by a legitimate business purpose." *Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258–59 & n.9 (9th Cir. 1990). The plaintiff "may rebut an asserted business justification by demonstrating either that the justification does not legitimately promote competition or that the justification is pretextual." *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1212 (9th Cir. 1997). To prove pretext, the plaintiff must adduce evidence that directly undermines the veracity of the defendant's proffered justification. *See Image Technical Servs. v. Eastman Kodak Co.*, 903 F.2d 612, 618–19 (9th Cir. 1990); *see also ACT, Inc. v. Sylvan Learning Sys., Inc.*, 296 F.3d 657, 668 (8th Cir. 2002) (evaluating whether the "declared business reasons for [the conduct] were pretext for [the defendant's] *true* goal" (emphasis added)). Courts are hesitant to "second-guess [a defendant's] business judgment" because "[t]he question is not whether [the defendant] made the right or wrong decision; it is whether [the defendant] acted for an unlawful reason." *Clark v. Mirage Casino-Hotel, Inc.*, 815 F. App'x 150, 152 (9th Cir. 2020) (discussing pretext in the labor discrimination context).

320. It is not sufficient to show that the challenged conduct was motivated only in *part* by anticompetitive intent—if the evidence "at most shows that a secondary motivation of the [challenged conduct] was to disadvantage the competition," the existence of other procompetitive justifications for the conduct precludes a Section 2 claim. *Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1259 (9th Cir. 1990).

321. Epic has not shown that *all* of Apple's justifications are pretextual, as is its burden.

322. *First*, Epic has not shown that Apple's justification of enhancing consumers' safety, security, privacy, and reliability is pretextual. Epic's expert admits that the requirement of exclusive distribution through the App Store provides security benefits to consumers. At that point, the inquiry ends—Apple has offered a legitimate business justification for its

conduct, and Epic has admitted that such justification is not pretextual, because the conduct actually does advance the stated end. Indeed, even as Epic objects that third-party app stores *might* offer comparable security measures, there is substantial evidence that Apple's design of the App Store has in fact benefitted customers by providing a safe platform through which to download native apps. FOF ¶ 594. If Epic's demanded changes were implemented, there is no guarantee that third-party app stores would offer comparable security measures, and some customers may not know ex ante whether they are downloading an app through a third-party app store that provides the same quality of security as the App Store. Moreover, breaches in security owing to malware from other platforms could be erroneously attributed to Apple.

323. In any event, it is not Apple's burden to prove that its security measures cannot be improved upon or protect against every conceivable threat to iPhone users. Even if some security threats remain, Apple protects its users better than anyone else does. It is able to do so because the App Store's design gives it the power to curate apps in a way that enhances reliability, security, and privacy, and thus benefits consumers. *See, e.g.*, *United Nat'l Maint., Inc. v. San Diego Convention Ctr. Corp., Inc.*, No. 07-CV-2172, 2008 WL 11333629, at *7 (S.D. Cal. Feb. 19, 2008) (finding no pretext where the defendant implemented a security policy that "present[ed] an efficient and feasible way to deal with security concerns related to this particular category of employees"). There is no evidence that this justification is mere pretext.

324. *Second*, Epic has not shown that Apple's justification of maintaining or improving the quality of its services is pretextual. There is no evidence suggesting that Apple does not genuinely care about the quality of services it offers to its customers, nor is there any evidence that Apple does not genuinely believe that iOS offers consumers an enhanced experience. In fact, the evidence shows the contrary—that iOS and the App Store were designed with consumers in mind from the start, and with an eye toward providing a new and unique premium experience. FOF ¶ 581.

325. *Third*, Epic has not shown that Apple's justification of broadening consumer choice is pretextual. *See Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1157 (9th Cir. 2003). Again, the most Epic can do is argue that Apple could broaden consumer choice in other ways, but that does not mean that Apple's stated justification is pretextual. Even if Apple has misjudged the extent to which the design of the App Store broadens consumer choice, that would not give rise to a claim of pretext.

326. *Fourth*, Epic has not rebutted Apple's legitimate business interest in protecting its proprietary information and intellectual property and preventing free-riding. There is no evidence that Apple is not genuinely interested in protecting its intellectual property, nor is there any evidence to doubt that Apple has a real commitment to preventing free-riding.

327. Epic's attempted analogy to macOS—which does not have a similar "walled garden" design—is inapt. Section 2 does not require an alleged monopolist to "alter its way of doing business whenever some other approach might yield greater competition." *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 415–16 (2004). There are meaningful differences between macOS and iOS that Apple determined

warranted a different approach between the two operating systems. FOF ¶ 72. The fact that Apple has chosen to protect its intellectual property on iOS in a different way from how it does so for macOS does not mean that Apple's justifications are pretextual.

g. There Is No Least Restrictive Alternative Requirement

328. Epic cannot prevail by showing that there were less restrictive alternatives to the challenged conduct. "[T]here is no least restrictive alternative requirement in the context of a Section 2 claim." *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 620 (9th Cir. 1990); *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, et al., 2008 WL 7346921, at *16 (C.D. Cal. July 9, 2008), *aff'd*, 592 F.3d 991 (9th Cir. 2010). That is 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." *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 415–16 (2004); *see also Int'l Rys. of Cent. Am. v. United Brands Co.*, 532 F.2d 231, 239–40 (2d Cir 1976) (stating that proof of a company's reasonable steps to preserve its business interests does not, without more, raise a genuine issue of material fact under § 2).

329. In any event, as discussed with regard to Epic's Section 1 claims, *see infra* § III.C.ii.b (¶¶ 516–30), forcing Apple to change the way it enables the distribution of apps and monetizes the App Store to allow alternative marketplaces to distribute apps for iOS devices would not "be virtually as effective" or come "without significantly increased cost." *In re Nat'l Collegiate Athletic Ass'n Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1260 (9th Cir. 2020) (quotation marks omitted).

330. While Epic asks the Court to balance the procompetitive and anticompetitive effects of Apple's conduct, that is also inappropriate for a Section 2 claim. Under the burden-shifting framework sometimes used for Section 2 cases, a plaintiff only may "show that the proffered business justification is pretextual." *Behrend v. Comcast Corp.,* 03-CV-6604, 2012 WL 1231794, at *19 (E.D. Pa. Apr. 12, 2012); *see also Morris Commc'ns Corp. v. PGA Tour, Inc.*, 364 F.3d 1288, 1295 (11th Cir. 2004) (holding that once the defendant has met its burden to show its valid business justification, the plaintiff only may show that the proffered business justification is pretextual); *ACT, Inc. v. Sylvan Learning Sys., Inc.*, 296 F.3d 657, 670 (8th Cir. 2002) (holding that when a valid business reason exists for the conduct, that conduct cannot support the inference of a Section 2 violation). There is no balancing inquiry with respect to this claim.

iii. Sherman Act Section 2 – Monopoly Maintenance in the "iOS In-App Payment Processing Market" (Epic Count 4)

331. In Count 4, Epic claims that Apple has a monopoly in the "iOS In-App Payment Processing Market" that it has unlawfully maintained by requiring "iOS app developers that sell in-app content to exclusively use Apple's In-App Purchase." Dkt. 1 ¶¶ 219–20.

332. As explained with regards to Epic's other Section 2 monopolization claim based on Apple's distribution terms, *see supra* § III.B.i (¶ 218), "proving an antitrust violation under Section 2 of the Sherman Act is more exacting than proving a Section 1 violation," "a court [that] finds that the conduct in question is *not* anticompetitive under § 1 . . . need not separately analyze the conduct under § 2." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991–92 (9th Cir. 2020). Because Counts 4 and 5 are both premised on Apple's requirement that developers use Apple's In-App Purchase for in-app purchases of in-app content, Dkt. 1 ¶ 227; *see also id.* ¶¶ 129–34 (Epic's overlapping allegations concerning IAP), Count 4 fails for the same reasons that Count 5 fails. *See infra* § III.C.iii (¶¶ 531–41).

b. Apple Lacks Monopoly Power in the Relevant Market[14]

333. Like Epic's Section 2 monopolization claim for the distribution of apps, Epic's Section 2 claim regarding IAP fails because Apple does not have monopoly power or even market power in the relevant product market.

334. As discussed above, *see supra* § II.B.ii (¶¶ 31–79), the relevant market is digital transactions between game app developers and consumers of game app content. Epic does not even try to argue that Apple has monopoly power in that market. Thus, because Apple's definition of the market is correct, Epic's claim fails at the outset for lack of monopoly power.

335. In the absence of evidence that Apple has a monopoly in the relevant market, Epic instead invites the Court to apply an "iOS In-App Payment Processing Market." Dkt. 1 ¶ 109. But as discussed previously, *see supra* § II.B.iii (¶¶ 80–112), that is not a properly defined market. And even accepting that it is, Apple does not have monopoly power in a market that includes all reasonably interchangeable payment processing providers.

336. If Epic's conception of the market as consisting of "payment processors" is correct—although this conception fails because IAP is not even a payment processor—then Apple lacks monopoly power because it competes with companies like PayPal, Stripe, and Square, and occupies only a small fraction of the market. FOF ¶ 667. By way of example, in 2018, the App Store's U.S. storefront processed less than 3% of the total dollars processed in the United States by online payment processing companies. FOF ¶ 669.

337. Even limiting the scope only to iOS, as detailed above, *see supra* § III.B.i.a (¶ 242), the App Store is not the only way to distribute apps to iOS consumers. Developers can instead offer web apps, accessible through the Safari web browser on an iOS device. FOF ¶ 233. Apple imposes no constraints on the type of payment solutions that may be used for web apps, and thus has no control over that portion of the market. Epic has not shown that, accounting for that portion of the market, Apple has a monopoly in the market for in-app payment processing; rather Epic ignores that segment of the proposed "market" altogether.

[14] The requirement of monopoly power is addressed in § 7.1, pages 52–54 of the Joint Elements Submission.

It is Epic's burden to prove monopoly power, yet it has failed to address the numerous other firms with which Apple competes.

338. Therefore, not only does Apple lack monopoly power in the properly defined market, it also lacks monopoly power in Epic's proposed market. Epic's claim fails.

c. Apple Has Not Engaged in Exclusionary Conduct with Respect to IAP[15]

339. Even accepting that Apple has monopoly power in a relevant market, Apple has not engaged in exclusionary conduct in anticompetitive maintenance of any such monopoly power, a necessary element of a monopolization claim. While Epic complains about Apple's "contractual terms" that require developers, such as Epic, to use its IAP for certain transactions, that conduct is not unlawful.

340. Epic argues that its claims are based on a desire *not* to deal with Epic, but that again misapprehends the law and the nature of the claims. Epic is not forced to do business with Apple at all, and, more importantly, it is not forced to use IAP. Epic, like all other developers, is free to monetize (or not monetize its app) in many ways. For example, Epic could use in-game advertising, for which it pays no commission to Apple. FOF ¶ 249.11. It could sell the *Fortnite* app itself, which does not require the use of IAP, but rather a different set of APIs not challenged by Epic. FOF ¶ 55.

341. Thus, when Epic executes a digital transaction through the App Store, it is already doing business with Apple, and is doing business *voluntarily*. Epic is objecting in this lawsuit to the terms and conditions Apple has set for digital transactions that are executed using its intellectual property. In other words, Epic's complaint is that it is being required to pay for the monetization option *it* selected for *Fortnite* and other apps. The question is thus whether Epic may dictate the terms on which it uses Apple's services to execute digital transactions.

342. Apple is not required to deal with Epic on Epic's preferred terms. *See supra* § III.B.i.b (¶¶ 263–83). "[T]here is no duty to deal under the terms and conditions preferred by a competitor's rivals." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016) (alteration and quotation marks omitted). As with its distribution business model, Apple is entitled to charge for the services it provides to developers, including the licensing of its intellectual property, and to select the best way to collect those charges. *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438, 448 (2009) ("As a general rule, businesses are free to choose . . . [the] terms[] and conditions" of their dealings with their competitors.). Regardless of Epic's preferences, there is nothing unlawful about Apple setting specific terms for the use of its intellectual property and creating an innovative mechanism to ensure that it does, in fact, receive its revenue share. As with

[15] The requirement of exclusionary conduct is addressed in §§ 7.2–7.2.1, pages 55–58 of the Joint Elements Submission.

Count 1, Apple has no duty to deal with Epic, and no duty to deal with Epic on the terms demanded, and thus has not engaged in unlawful exclusionary conduct.

d. Apple's Conduct with Respect to IAP Does Not Have Anticompetitive Effects[16]

343. Even assuming that Apple's conduct was unlawful, Epic's claim still fails because there is no evidence that the effect of that conduct is anticompetitive, a necessary element of a Section 2 monopolization claim.

344. *First*, there is no reduced output. Instead, there are more digital game transactions than ever. Since the App Store's launch, the number of digital game transactions has increased dramatically. FOF ¶ 575. There is thus no evidence that "output was restricted" as is required to show injury to competition. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2288 (2018) (quotation marks omitted).

345. *Second*, there is no evidence of increased prices. Far from being supracompetitive, the commission that Apple charges to developers for all its services—of which IAP is only one—is consistent with the value provided by Apple and its relevant comparators. IAP, for example, adds value by offering both a safe and convenient mechanism by which consumers are able to make purchases of digital content on the App Store via a single, secure payment mechanism that is seamlessly integrated into the app distribution platform. FOF ¶¶ 683–88. This benefits developers (especially small ones), who do not have to create payment solutions for their apps, and also consumers, who are able to purchase in-app digital content across all of their apps without reentering payment information each time. FOF ¶¶ 691–96.

346. Apple's commission is in line with its competitors, including Google, Samsung, Sony, Nintendo and Microsoft. *See supra* § III.B.i.a (¶ 230). In fact, the emergence of these competitors—who all use commission rates at or above those paid by developers for digital game transactions on the App Store—demonstrates that IAP has encouraged competition by offering a feasible business model that others can replicate and offer in competition to the App Store.

347. The payment processing fees charged by others, such as PayPal, Stripe, Square, and Braintree, are inapt comparators. Apple's commission is not a payment processing fee—Epic's CEO confirmed in his testimony that commission rates for digital transactions do not represent mere payment processing fees. FOF ¶ 251.3. Rather, it reflects Apple's commission for the use of its intellectual property (iOS and the App Store), the numerous resources it offers to developers (e.g., the SDK), and the other promotional benefits that Apple provides (access to a strong user base, advertising and marketing). FOF ¶¶ 651–52. The payment processors Epic identifies do not provide any of the same associated benefits

[16] Anticompetitive effects are addressed in § 7.2.2, pages 59–61 of the Joint Elements Submission.

that Apple provides to the developers. None of them, for instance, provide a platform for distributing apps to consumers around the world.

348. Not only is Apple's commission comparable to other platforms', it includes the fees Apple pays to Chase and payment networks. As noted below, *see infra* § III.C.i.c (¶ 456), IAP is not really a payment processor, insofar as Apple relies on third-party service providers to actually process payments, FOF ¶ 651. Moreover, the commission would be collectible from developers even if they moved to a different payment solution. Therefore, even if developers were allowed to contract directly with third-party payment processors or to use an intermediary system like Square, any developer using a third-party payment processor would have to pay both those processor fees *and* Apple's commission. Using third-party payment processors would be *more* expensive for developers because they would have to pay both fees.

349. *Finally*, rather than harming competition, like the introduction of iOS and the App Store, the introduction of IAP has improved the quality of the product ultimately provided to consumers. Because of IAP, developers have an opportunity to use different monetization strategies, such as the "freemium" and "paymium" models that allow users to access primary content in an app for free and purchase in-app "upgrades" or "premium" experiences. FOF ¶ 679. IAP's seamlessness and bundled services give developers an opportunity to offer a pricing strategy that attracts both price-sensitive consumers that might want to use the app without any additional in-app content, while also earning more from other users of the app who are willing to spend to enable additional special features. FOF ¶¶ 683–690.

350. But while many developers choose to use IAP for these reasons, Apple does not require them to use it at all. Developers are free to monetize their apps in different ways, and Apple does not prevent developers, including Epic, from monetizing their applications in a manner that avoids any commission to Apple, encouraging innovative monetization strategies that allow developers to tailor their app to their consumers. FOF ¶ 93. For example, some developers sell physical services or products, and others decide not to sell digital goods via iOS apps. *Id.* In fact, 83% of apps on the App Store are entirely free. FOF ¶ 551.

351. In short, given the value provided by IAP and the innovation it has spurred across the market, there is no evidence that the contractual terms that Epic challenges have had an anticompetitive effect.

e. Any Allegedly Anticompetitive Conduct Is "Redeemed" by a Multitude of Procompetitive Business Justifications[17]

352. To the extent the terms of the DPLA with respect to IAP have any anticompetitive effects, Apple has proffered a number of procompetitive justifications for its conduct here. *See*

[17] Business justifications are addressed in §§ 7.2.3–7.2.5, pages 62–66 of the Joint Elements Submission.

Universal Analytics, Inc. v. MacNeal-Schwendler Corp., 914 F.2d 1256, 1258 (9th Cir. 1990) (An "antitrust defendant's conduct is redeemed by a legitimate business purpose.").

Collection of Commission

353. The collection of a commission for delivery of a product is a legitimate business justification. *See Morris Commc'ns Corp. v. PGA Tour, Inc.*, 364 F.3d 1288, 1296 (11th Cir. 2004) ("Section 2 of the Sherman Act does not require [the defendant] to *give* its product freely to its competitors.").

354. Apple's IAP is integral to its ability to collect its commission. Apple has invested billions of dollars building, developing, and improving the App Store. FOF ¶ 169. Epic does not dispute (nor could it dispute) that Apple is entitled to collect a commission from those firms—like Epic—that seek to license Apple's intellectual property. A license is necessary because each time a digital transaction is effected through the App Store, it reflects the use of Apple's intellectual property in the development of the digital content that has been purchased, the operation of the digital content on Apple's iOS technology, and the technology that is being used to facilitate the digital transaction. FOF ¶ 89.

355. Apple's commission is the primary method through which Apple monetizes the App Store, including the proprietary tools and resources made available to developers. IAP allows Apple's commission to be automatically deducted from transactions, obviating the need for (and expense of) separately tracking, auditing, and collecting commissions on in-app purchases of digital content. FOF ¶¶ 681–82. It prevents free riding on Apple's intellectual property by developers, such as Epic, who otherwise might be able to bypass Apple's commission by distributing outside the iOS native-app distribution and payment processing system. *See Coast to Coast Entm't, LLC v. Coastal Amusements, Inc.*, No. 05-CV-3977, 2005 WL 7979273, at *22 (D.N.J. 2005) (reasoning that the defendant's "motive was to protect the return on its investment . . . and to prevent any free riders from taking advantage of its contributions, which in effect enhances competition"). Based on Apple's business judgment, it has decided that the best way to collect compensation from developers, including for their access to Apple's considerable consumer base, is through the use of IAP.

356. More specifically, Apple has determined that the use of IAP is the most *efficient* way to ensure that it is able to collect its commission. If developers who earn money from in-app purchases—and owe a contractually agreed upon commission to Apple for those purchases (which Epic does not dispute Apple is entitled to)—were able to circumvent IAP, Apple would have limited ability, from a technical perspective, to collect any commissions on those sales. FOF ¶ 681. Instead, Apple would largely have to rely on developers themselves to accurately report the revenue earned and remit the commission back to Apple. Apple would have little to no ability to confirm that developers were remitting the full, contractual amount, or that they were timely doing so, imposing additional costs on Apple and directly injuring its ability to collect a commission for the licensing of its intellectual property. FOF ¶ 682.

357. Epic's "Project Liberty" demonstrates the practical problems with dispensing with IAP. Epic has never argued that a 30% commission on digital in-app transactions is anticompetitive, only that the compelled use of *IAP* is anticompetitive. *See* Dkt. 1 ¶¶ 216–32. Yet through its circumvention of IAP, Epic has *never* paid to Apple its 30% commission for the digital in-app transactions executed through its alternative payment mechanism on the iOS version of *Fortnite*. Instead of having the ability to take its commission directly from the transaction as it is being executed (as IAP allows it to do), Apple has been forced to bring claims for breach of contract and invest substantial resources in pursuing this litigation. The required use of IAP helps to avoid situations exactly like the one Apple currently is in.

358. Protection of its intellectual property through rational means of collecting commission is a valid business justification for Apple's conduct. *See Consultants & Designers, Inc. v. Butler Serv. Grp., Inc.*, 720 F.2d 1553, 1559 (11th Cir. 1983) (concluding that the defendant had "a legitimate interest in protecting from opportunistic appropriation its investment").

359. It is legally irrelevant whether Apple initially thought the App Store would generate a profit. Epic has not challenged the *price* that Apple charges to facilitate digital transactions, and so any complaint about the profit margins of the App Store as compared to 13 years ago is untethered to the claims asserted here. Moreover, if it is actually the case that Apple incorrectly predicted the profit margins for the App Store (an assertion not borne out by the evidence as Apple does not calculate profit margins for the App Store), the 30% commission rate has remained constant at all times, except insofar as Apple has *reduced* the effective commission rate by offering special reduced rates for many developers. FOF ¶¶ 569–71. The justifications for setting a 30% commission rate are at least as legitimate today as they were thirteen years ago.

360. It also is irrelevant that Apple does not collect a commission on the sale of physical goods and services and thus does not require the use of IAP for these transactions. This policy is not news to Epic (or any other developer), as it has been in place since the inception of IAP. FOF ¶ 159. For digital transactions, Apple is delivering digital content directly to the user. FOF ¶ 55. But Apple does not play the same role for an order of physical goods or services—Apple has no control over or insight into whether an order from Amazon is timely delivered, a driver requested through Uber arrives on time, or a consumer product is in the condition promised. Apple made the judgment that collecting a commission only for digital transactions would be most consistent with the services it provides. It was entitled to make that judgment without second-guessing by Epic or the courts. *See Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004).

Consumer Safety and Security

361. Enhancing consumer safety and security is a legitimate business justification. *See Cont'l T. V., Inc. v. GTE Sylvania Inc.*, 433 U.S. 36, 55 n.23 (1977).

362. Apple's IAP provides a safe way for consumers to purchase digital content. IAP is a safe and secure method for purchasing digital content. FOF ¶¶ 684–85. Specifically, IAP has

the potential to be more secure than other services, such as PayPal, because it utilizes built-in service versus accessing third-party libraries that may or may not have malware. FOF ¶ 685. As for hardware, Apple uses a biometric scanner as part of its Touch ID to authenticate transactions, and similarly offers users its revolutionary Face ID technology to make purchases. FOF ¶¶ 175, 179. IAP protects the privacy and security of iOS users by withholding their private information from developers or other third parties. FOF ¶ 685. Because developers must use IAP for digital transactions, Apple and its users can be confident that digital transactions will be completed in a safe and secure manner, and that users' payment methods and instruments will be protected. Allowing new payment solutions for digital transactions would introduce new security risks for digital transactions, and Apple has reasonably elected to mitigate against those risks by requiring the use of IAP.

Providing Better Service to Consumers

363. Providing enhanced services to consumers is a legitimate business justification. *See Cal. Computer Prods., Inc. v. Int'l Bus. Machs. Corp.,* 613 F.2d 727, 744 (9th Cir. 1979).

364. IAP allows Apple to provide better service to consumers by providing a single point of sale, rather than requiring that consumers manage different payment options for every app they use. FOF ¶ 687. Through a streamlined process, IAP identifies customers and devices; conducts fraud-related checks; conducts credit-worthiness checks; stores and stacks payment instruments; delivers content; and conducts asynchronous dealing. FOF ¶ 693. In addition, through IAP, users can customize their settings for use across all apps. FOF ¶ 688. Because Apple manages those settings, when consumers obtain a new device, they can keep them without having to customize them a second time on a different device, adding further value to consumers. *Id.* Furthermore, IAP enables Apple to monitor transactions and ensure that developers deliver the digital goods and services that consumers have paid for. FOF ¶ 686. Consumers can thus make purchases through the App Store with confidence that they will actually receive what they purchase.

Improving Product Quality for Developers

365. Improving product quality for the benefit of buyers is a legitimate business justification. *See Cal. Computer Prods., Inc. v. Int'l Bus. Machs. Corp.,* 613 F.2d 727, 744 (9th Cir. 1979) (concluding that the defendant, "assuming it was a monopolist, had the right to redesign its products to make them more attractive to buyers . . . by . . . improved performance").

366. Along with helping Apple provide a better service for consumers, IAP improves the quality of Apple's service for developers, too. IAP aids with currency conversion and compliance with tax laws. FOF ¶ 692. IAP also conducts fraud-related and credit-worthiness checks. FOF ¶ 693. By doing so, Apple verifies customers for developers and ensures that developers actually get paid for the products and services they provide to consumers.

367. Having a secure payment solution—including measures that detect fraud, restore consumers' purchases on their new devices, ensure that developers do not mishandle funds,

protects against accidental purchase, safeguard the privacy of users, and monitor the delivery of digital transactions—makes the App Store more appealing to users, which in turn enhances the value of the platform to developers. In addition, the centralized payment system enables Apple to aggregate payments, which is especially valuable to smaller developers or those pursuing small transactions. FOF ¶ 693. Developers benefit also because new users of their app will instantly have a seamless and familiar way to make in-app transactions and will not be deterred by the frustration of having to add new payment information for each app they use. FOF ¶ 691. In this way, making IAP the *exclusive* payment processing function for iOS apps is valuable because each additional app that uses IAP increases the value of IAP to all other developers and consumers. If, on the other hand, some developers use a less effective third-party payment solution, consumers' dissatisfaction with those alternatives is likely to make the App Store less attractive to consumers as a whole (who may have little or no visibility into the payment solutions used by each developer) and thus less profitable for developers.

f. Apple's Procompetitive Justifications Are Not Pretextual

368. Because Apple has proffered these valid, business justifications for its conduct, Epic may prevail on a claim under Section 2 only if it demonstrates that each of Apple's proffered procompetitive justifications is invalid or pretextual. *See Universal Analytics, Inc. v. MacNeal-Schwendler Corp.*, 914 F.2d 1256, 1258–59 & n.4 (9th Cir. 1990). It has not done so.

369. *First*, although Epic thinks that Apple could prevent free riders without requiring the use of IAP for digital transactions, Apple is entitled to make its own business decision about the best way to do so, efficiently and effectively. Courts are ill-suited "to act as central planners, identifying the proper. . . terms of dealing." *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 408 (2004), and Epic's invitation to second guess Apple's own business judgment should be rejected.

370. *Second*, with respect to the security features of IAP, Epic cannot deny that Apple has legitimately endeavored to provide a safe and secure mechanism for transactions between developers and consumers. All antitrust law requires is that Apple has legitimate, non-pretextual reasons for its conduct, and Apple has shown that it does. "[F]irms must have broad discretion to make decisions based on their judgments of what is best for them and . . . business judgments should not be second-guessed even where the evidence concerning the rationality of the challenged activities might be subject to reasonable dispute." *In re Citric Acid Litig.*, 191 F.3d 1090, 1101 (9th Cir. 1999).

371. *Third*, Epic cannot prove that Apple's interest in providing a better service to consumers through exclusive use of IAP is pretext. As noted above, requiring the use of IAP for digital transactions enables Apple to exercise quality over such transactions. FOF ¶ 55. Apple's business reasoning is internally consistent, and there is no evidence that Apple's desire to enhance the value of the App Store by providing better service to its consumers is pretextual.

372. *Fourth*, Epic cannot deny that Apple has a genuine interest in providing quality services to its developers. And based on Apple's business judgment, it has determined that requiring the use of IAP for digital transactions adds value, enhances the value of the platform, and thereby increases its value to developers. Once again, even if Epic could prove that Apple is "mistaken" about whether exclusive use of IAP in fact enhances value for developers, that is not enough to show pretext. *Day v. Sears Holdings Corp.*, 930 F. Supp. 2d 1146, 1171 (C.D. Cal. 2013).

373. As discussed with regard to Epic's Section 2 claim regarding app distribution, a plaintiff may not prevail in a Section 2 claim by showing that there were less restrictive alternatives to the challenged conduct or by inviting the Court to balance competitive and anticompetitive effects. *See supra* § III.B.i.f (¶¶ 328–30).

iv. Sherman Act Section 2 – Essential Facility (Epic Count 2)[18]

374. Epic also claims that Apple has violated the Sherman Act "through its unlawful denial to Epic and other app distributors of an essential facility—access to iOS," Dkt. 1 ¶ 197. This claim fails as a threshold matter, because there is no essential facility doctrine under Section 2.[19]

375. The Sherman Act generally "does not restrict the long recognized right of a trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal." *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919). There is consequently no general duty to cooperate with rivals. *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016); *see also Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1073 (10th Cir. 2013) (Gorsuch, J.) (holding that "a strong presumption of legality" attaches to unilateral action because "[e]xperience teaches that independent firms competing against one another is almost always good for the consumer"). Only in exceptional circumstances—which, for the reasons noted above, are not present here, *see supra* § III.B.i.b (¶¶ 263–83)—will a firm be compelled to do business with its competitor, such as where there is a "unilateral termination of a voluntary and profitable course of dealing," *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1132 (9th Cir. 2004).

376. Epic invokes an even narrower exception to the general rule that there is no general duty to cooperate with rivals: an essential facility claim, which is "a variation on a refusal to deal claim." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1184 (9th Cir. 2016).

---

[18] The elements of an essential facility claim are addressed in § 8, pages 68–69 of the Joint Elements Submission.

[19] Apple acknowledges that the Ninth Circuit has recognized an essential facility claim in limited circumstances, but respectfully preserves herein its contention that there is no such claim under Section 2 of the Sherman Act.

377. The Supreme Court has "never recognized" an essential facility doctrine under Section 2. *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 411 (2004); *accord Metronet Servs. Corp. v. Qwest Corp*., 383 F.3d 1124, 1129 (9th Cir. 2004). Rather, the Court has recognized that "[f]irms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers." *Trinko*, 540 U.S. at 407. Accordingly, compelling such firms to share the source of their advantage is in tension with the underlying purpose of antitrust law, *id.* at 407–08, and, absent a duty to cooperate, any claim premised on a rival's refusal to deal with or assist the plaintiff fails, *see Pac. Bell Tel. Co. v. linkLine Commc'ns*, *Inc.*, 555 U.S. 438, 451 (2009). Courts therefore are hesitant "to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited." *Trinko*, 540 U.S. at 408.

378. In the lower courts, the essential facility analysis finds its "roots" in cases involving concerted refusals to deal by multiple firms that took control of physical bottlenecks because, in "that setting, . . . [t]he defendants had not built or created anything except a combination to take over existing facilities" and "mandating the [defendants] admit their competitors merely permitted joint ownership of common facilities." *SCFC ILC, Inc. v. Visa USA, Inc.*, 36 F.3d 958, 971 (10th Cir. 1994).

379. Whatever merit such a theory has in the context of concerted action, such analysis "cannot automatically govern *unilateral* denial of an essential facility" because "concerted action is exceptional, whereas unilateral action is omnipresent," and courts must "be very wary about examining the decisions of each of those firms in our economy." *Alaska Airlines, Inc. v. United Airlines, Inc*., 948 F.2d 536, 544 (9th Cir. 1991) (quoting Philip E. Areeda, *Essential Facilities: An Epithet In Need of Limiting Principles*, 58 Antitrust L. J. 841, 844–45 (1990)).

380. In the context of unilateral action, the essential facility doctrine has no legal basis. A plaintiff pursuing such a claim is essentially seeking to appropriate its competitor's property for itself, compelling the competitor to give up the lawful advantage the competitor achieved through innovation and investment so that the plaintiff may benefit from that innovation at the expense of the competitor. *See MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1129 (9th Cir. 2004). The essential facility doctrine is thus decidedly *anti*competitive when applied to unilateral conduct, and thus is "inconsistent with antitrust's purpose." 7D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 771b (4th ed. 2020 supp.).

381. Indeed, such a claim threatens to discourage firms from investing in innovative product designs in the first place. If a firm's property can be appropriated by competitors any time it becomes *too* valuable, then firms would have little incentive to invest resources in the development of cutting-edge products, to the detriment of consumers. As then-Judge Gorsuch has explained, "Forcing firms to help one another . . . risks reducing the incentive both sides have to innovate, invest, and expand[,] . . . results inconsistent with the goals of antitrust. " *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1073 (10th Cir. 2013) (Gorsuch, J.).

382. In light of the Supreme Court's refusal, thus far, to recognize such a claim, and its inconsistency with the purposes and design of antitrust law, an essential facility claim is untethered to the law and cannot serve as the basis for liability under Section 2.

383. In fact, Epic appears to have (rightfully) abandoned this theory of liability. None of Epic's experts mention the theory at all, much less provide analytical or economic support for the theory. And Epic's own lead economist states that the allegations here should be characterized as tying or as a *conditional* refusal to deal, apparently disclaiming essential facility as a viable theory of liability. Thus, along with having no basis in the law, Epic's essential facility claim has no support in the record. This claim may be dismissed on the pleadings.[20]

384. In any event, Epic has not proved and cannot prove an essential facility claim. To establish a violation of the essential facility doctrine, Epic must show (1) that Apple is "a monopolist in control of an essential facility"; (2) that Epic "is unable reasonably or practically to duplicate the facility"; (3) that Apple "has refused to provide [Epic] access to the facility"; and (4) that "it is feasible for [the defendant] to provide such access." *Aerotec Int'l, Inc. v. Honeywell Int'l*, Inc., 836 F.3d 1171, 1185 (9th Cir. 2016). Epic has not satisfied any of these elements.

b. iOS Is Not an Essential Facility Under Any Market Definition[21]

385. The first and second elements of an essential facility claim—whether the defendant is in control of an essential facility and whether the defendant may reasonably or practically duplicate the facility—often collapse into a single inquiry of whether the facility in question is an essential facility. "[T]he second element is effectively part of the definition of what is an essential facility in the first place. That is to say, if the facility can be reasonably or practically duplicated it is highly unlikely, even impossible, that it will be found to be essential at all." *City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1380 (9th Cir. 1992). Accordingly, it is appropriate to assess the first two elements of an essential facility claim in tandem.

386. Essential facilities typically are limited to physical infrastructures of a finite availability (such as a bridge or a power network) 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 (1912).

387. "Essential means essential," not "'best,' 'most profitable' or 'preferable.'" *JamSports & Entm't, LLC v. Paradama Prods., Inc.,* 336 F. Supp. 2d 824, 839 (N.D. Ill. 2004). Only

[20] The Court directed the parties not to file motions in limine before trial. Hr'g Tr. 18:2 (Mar. 1, 2021).

[21] The meaning of an essential facility is addressed in §§ 8.2–8.4, pages 73–77 of the Joint Elements Submission.

preexisting "bottlenecks" (such as bridges and infrastructure networks) typically have been deemed essential facilities by the courts. *See MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1148 (7th Cir. 1983).

388. Even if it is not economically feasible for the plaintiff to duplicate the alleged essential facility, that facility is not essential if alternatives are available to the plaintiff. *See Blix Inc. v. Apple, Inc.*, No. 19-CV-1869-LPS, 2020 WL 7027494, at *7 (D. Del. Nov. 30, 2020). The alternative need not be of equivalent quality or efficiency, for "even if [a plaintiff] was denied access to the most desirable facilities, that is not enough to make out an essential facilities claim" so "long as there is an alternative (albeit inferior)" facility that the plaintiff could access (or create). *JamSports & Entm't, LLC v. Paradama Prods., Inc*., 336 F. Supp. 2d 824, 839 (N.D. Ill. 2004).

389. As discussed above, *see supra* § II.B.ii (¶¶ 31–79), the relevant product market here is digital transactions for game apps, and Apple does not have a monopoly (or even market power) in that product market, *see supra* § III.B.i.a (¶¶ 229–36). For this reason alone, Epic's essential facility claim fails.

390. Moreover, iOS cannot be an "essential" facility in this market because there are numerous platforms through which competitors facilitate digital transactions (and Epic in fact owns one of them, EGS). Indeed, Epic's own allegations establish that iOS is not an essential facility because Epic has been (and continues to be) successful in distributing its software programs, including *Fortnite*, to consumers through alternative platforms. FOF ¶¶ 355–355.4; *see also Blix Inc. v. Apple, Inc.*, No. 19-CV-1869, 2020 WL 7027494, at *7 (D. Del. Nov. 30, 2020) ("Blix has not stated a claim for liability under the essential facilities doctrine because Blix's allegations, taken as true, demonstrate that the MacOS App Store is not an essential facility. Blix alleged that BlueMail (1) 'achieved success on ***multiple*** platforms,' i.e., not just on Apple's platforms and (2) was sold in the market for five years before it became available in MacOS App Store." (emphasis in original)). And as discussed in more detail above, *see supra* § II.B.ii.a (¶¶ 46–53), developers have many ways to distribute their game apps, including through Google Play, Samsung Galaxy Store, Switch, Windows Phone Store, Amazon App Store, Origin, and, of course, EGS. FOF ¶ 494.1.

391. Epic, however, insists that the product market is the distribution of iOS apps. Even if the Court were to accept that proposed market, a proprietary operating system encompassing features and functionalities protected by patent, copyright, and other intellectual property laws and doctrines cannot be an essential facility. The refusal to license intellectual property, including software and/or operating systems cannot give rise to liability under an essential facility theory. *See, e.g.*, *SolidFX, LLC v. Jeppesen Sanderson, Inc.*, 935 F. Supp. 2d 1069, 1082–83 (D. Colo. 2013) (rejecting argument that integration software was essential facility because doing so would "subvert . . . the rights granted a copyright holder" and the "assertion of one's copyright interests is [a] per se legitimate" business justification for a refusal to deal). For example, because "[t]he Copyright Act expressly grants to a copyright owner the exclusive right to distribute the protected work, . . . '[t]he owner of the copyright, if [it] pleases, may refrain from vending or licensing and content [itself] with simply exercising the right to exclude others from using [its] property.'" *Data*

Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1186 (1st Cir. 1994) (quoting *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932)).

392. Indeed, the "imposition of a duty to license might serve to chill the very kind of innovative process" that intellectual property laws incentivize and Apple undertook to develop iOS. *In re E. I. DuPont de Nemours & Co.*, 96 F.T.C. 653, *67 (1980). A firm's proprietary intellectual property cannot be an essential facility, because "an intellectual property owner has the right unilaterally to decide not to use or license its intellectual property." Herbert Hovenkamp et al., *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property* § 13.03 [C][2] (3rd ed. 2020 supp.). And there is "no case in which a United States court consciously held that an intellectual property right was itself an essential facility that must be licensed on reasonable and nondiscriminatory terms." *Id.*; *see also Data Gen. Corp. v. Grumman Sys. Support Corp.*, 761 F. Supp. 185, 192 (D. Mass. 1991) ("[A] better mousetrap is not necessarily an essential facility.").

393. iOS is not an essential facility. Rather, it is a proprietary operating system that is the result of substantial investment—of both time and money—by Apple. It consists of many design choices and features that are protected by patents, trademarks, and copyrights. FOF ¶¶ 89–89.4. Apple has no obligation—under the antitrust laws or otherwise—to redesign its proprietary systems to accommodate Epic, nor does it have an obligation to license its intellectual property out to would-be competitors on terms favorable to those firms. Just the opposite—an alleged monopolist "is much more likely to be held liable for failing to leave its rivals alone than for failing to come to their aid." *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1072 (10th Cir. 2013) (Gorsuch, J.).

394. A proprietary operating system cannot constitute an essential facility. Producers of technological devices—such as computers, phones, automobiles, appliances, etc.—have the choice when designing their products to adopt (or adapt) an existing open-source operating system (such as Linux or Android), licensing a proprietary operating system (such as Microsoft), or developing their own operating system (as Apple did with iOS). A firm that elects to design its own operating system cannot be compelled to provide public access to that operating system once it proves workable and desirable for other competitors. *See* Herbert Hovenkamp et al., *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property* § 13.03 [C][2] (3rd ed. 2020 supp.). It is the firm's prerogative to decide whether and to what extent to make its operating system available to others, and a firm's decision to restrict access (or to set terms of access) is not a basis for antitrust liability.

395. If Epic's proposed application of the essential facility theory were correct, a firm "might be deterred from investing, innovating, expanding (or even entering a market in the first place) with the knowledge anything it creates it could be forced to share." *Novell, Inc. v. Microsoft Corp.*, 731 F.3d 1064, 1073 (10th Cir. 2013) (Gorsuch, J.). In such circumstances, a firm would have little incentive to engage in the expensive and laborious process of innovating new products if any innovation would have to be shared with others at terms dictated by competitors, and in fact it may be economically irrational for firms to make such investments if courts could impose "forced sharing." *Id.* Accordingly, "a court's role is not to force access to proprietary information," because "that would reduce

incentive to innovate and ultimately harm consumers." *Morris Commc'ns Corp. v. PGA Tour, Inc.*, 235 F. Supp. 2d 1269, 1285 (M.D. Fla. 2002). Epic cannot "just demand the right to piggyback on its larger rival" in court, rather than "investing [or] innovating" itself. *Novell*, 731 F.3d at 1073.

396. Because iOS does not constitute an essential facility under any market definition, Epic's claim fails at the first element.

c. Epic Has "Access" to iOS[22]

397. Even if iOS could constitute an essential facility, Epic's claim still fails because Epic *does* have access to iOS through the terms of the DPLA. "[W]here access exists, the [essential facility] doctrine serves no purpose." *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 411 (2004). A plaintiff must prove it was "frozen out of" access to the facility. *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1185 (9th Cir. 2016). To do so, it must identify what kind of access it sought, prove that it made a request for such access, and prove that the defendant refused to grant it such access. *See City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1367 (9th Cir. 1992).

398. To start, Epic does not allege what constitutes "access to iOS," what actions by Apple allegedly constitute a denial of such access, or why any such actions are not reasonable. *See* Dkt. 1 ¶ 197. That alone dooms Epic's essential facility claim.

399. Even more damning, Epic's own experts admit that Epic has access to iOS, stating that Apple allows developers to create apps for iPhones by giving them *access to the iOS operating system*. Having identified the alleged essential facility as iOS, and then affirmatively offering evidence that Epic (and other developers) *have* access to iOS, Epic has no basis on which to maintain its essential facility claim.

400. Epic has not made a cognizable demand for "iOS" access that Apple has refused. *See City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1367 (9th Cir. 1992) ("But, even had Vernon offered some evidence which raised a material issue of fact with respect to Edison's reasons for refusing relative size share access, we can find no authority—and Vernon has pointed to none—which supports Vernon's theory that 'reasonable' access to Edison's facilities must take the form of relative size share access."). On the contrary, Epic requested and received access to iOS on the same terms as all other developers, i.e., through the DPLA.

401. Nor did Apple deny access to an essential facility by merely refusing to deal in a manner "conducive to [Epic's] existing business model," *MetroNet Servs. Corp. v. Qwest Corp.*, 383 F.3d 1124, 1130 (9th Cir. 2004), "in the most profitable manner" to Epic, *id.*, or on Epic's preferred terms, *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1185 (9th Cir. 2016) (plaintiff had access to facility even where process for doing so was "Kafkaesque" and inferior to "certain [other] customers"); *Ferguson v. Greater Pocatello*

[22] Access to an essential facility is addressed in § 8.5, pages 78–79 of the Joint Elements Submission.

Chamber of Commerce, Inc., 848 F.2d 976, 983 (9th Cir. 1988) (rejecting claim because plaintiff did not outbid its competitors for access to facility).

402. Epic clearly did (prior to Project Liberty) distribute its apps through iOS and the App Store. So do millions of other developers. "[T]he access factor cannot be read to mean that the courts will secure a better deal for an antitrust plaintiff." *City of Coll. Station, Tex. v. City of Bryan, Tex.,* 932 F. Supp. 877, 888 (S.D. Tex. 1996). As Epic knows, the DPLA sets forth the specific terms of Epic's access to iOS and its use of Apple's intellectual property. What Epic really means is that it does not like the terms of the access it *does* have. Even so, Epic does not claim that these terms prevent it from being profitable. Just the opposite: Epic has made over $700 million dollars through its distribution of *Fortnite* through iOS.

403. The fact that Epic *might* make more money if Apple implemented Epic's demanded changes is irrelevant. The essential facility doctrine does not require that Apple change its business model based on Epic's demand. For example, in *City of Vernon v. Southern California Edison Co.*, a California city sued a public utility based on the utility's alleged refusal to provide a specific type of access to its transmission lines. 955 F.2d 1361, 1363 (9th Cir. 1992). The Ninth Circuit rejected the city's essential facility claim, explaining that it was not "a case where [the utility] simply refused to supply [the city] with its power needs," and that the city's "demand that [the utility] turn over its facility to a city simply because the city could save money by obtaining cheaper power stands the essential facility doctrine on its head." *Id.* at 1367.

404. The same reasoning applies here—this is not a case in which Apple has refused to allow Epic access to iOS; rather, Epic is looking for better *terms* of access. There is no support for the notion that the essential facility doctrine can be used to bludgeon a competitor into granting the plaintiff unrestricted access to its intellectual property on terms of the plaintiff's choosing, and Epic's insistence otherwise fails.

d. Epic Has Not Shown That It Is Feasible for Apple to Alter the App Store's Design in the Way Epic Demands[23]

405. Epic has not shown that it is feasible for Apple to give Epic the "access" it desires.

406. For denial of access to give rise to liability, it must be technically and practicably feasible for the monopolist to give competitors access to its essential facility. *See MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1133 (7th Cir. 1983); *see also Hecht v. Pro-Football, Inc.*, 570 F.2d 982, 992–93 (D.C. Cir. 1977). "[This] element basically raises the familiar question of whether there is a legitimate business justification for the refusal to provide the facility." *City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1380 (9th Cir. 1992).

407. "Although the defendant generally has the burden of coming forward with a legitimate business justification after the plaintiff has shown evidence of monopolistic intent, the plaintiff . . . ultimately has the burden of proving that the defendant acted without a

[23] Feasibility of access is addressed in § 8.6, pages 80–81 of the Joint Elements Submission.

legitimate business justification." *City of Vernon v. S. Cal. Edison Co.*, 955 F.2d 1361, 1366–68 (9th Cir. 1992).

408. As discussed above, *see supra* § III.B.i.d (¶¶ 299–317), Apple has offered many procompetitive business justifications for the design of the App Store and the terms of the DPLA, including maintaining the quality of the service it provides and providing consumer security and privacy. An essential facility claim fails unless the plaintiff proves that *all* of the defendant's business justifications were invalid and/or pretextual. *See, e.g.*, *City of Anaheim v. S. Cal. Edison Co.*, 955 F.2d 1373, 1381 (9th Cir. 1992) (affirming judgment in favor of defendant because plaintiff failed to disprove business justifications). And Epic has not shown that these justifications are pretextual. Even though it posits that Apple's app review process and other features of the App Store *could* be more robust, that is not the standard for rebutting a legitimate business justification. Apple has adduced substantial evidence that its design of iOS and the App Store was motivated at least in part by procompetitive business justifications, and that is all that is required. *See supra* § III.B.i.e (¶¶ 318–27).

409. Nor can Epic satisfy its burden of showing that providing the "access" to iOS it demands would be economically feasible. *See City of Malden, Mo. v. Union Elec. Co.*, 887 F.2d 157, 160 (8th Cir. 1989) (use must be "economically and technically feasible"); *MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1133 (7th Cir. 1983) (similar); *Morris Commc'ns Corp. v. PGA Tour, Inc.*, 117 F. Supp. 2d 1322, 1327 (M.D. Fla. 2000) (similar).

410. There is no evidence that it would be economically feasible for Apple to change the design of iOS and the App Store. The feasibility requirement is "analyzed not in terms of all the possibilities" but rather "in the context of [the defendant's] normal course of business." *Laurel Sand & Gravel, Inc. v. CSX Transp., Inc.*, 924 F.2d 539, 545 (4th Cir. 1991). Epic, therefore, must show in Apple's "normal course of business," it would be feasible for Apple to allow Epic to have the type of access it seeks.

411. In order to show that it would be feasible to provide access in its "normal course of business," a plaintiff can show that the defendant already provides that access to other actors. *Laurel Sand & Gravel, Inc. v. CSX Transp., Inc.*, 924 F.2d 539, 545 (4th Cir. 1991). For example, in *Laurel Sand & Gravel*, the Fourth Circuit concluded that the plaintiff, a subsidiary railroad which was seeking access to railroad track, failed on the feasibility element because "[t]here is no evidence that [the defendant] rents track to subsidiary railroads." *Id.* Because there was no evidence that the defendant was granting access to other subsidiary railroads (and refusing to grant access only to the plaintiff in particular), there was no basis for the court to infer that providing the type of access demanded was feasible for the defendant. *Id.* The court thus analyzed feasibility "not in terms of all the possibilities of [the defendant] as a railroad, but in the context of its normal course of business." *Id.*

412. So too here. While Epic seeks a special deal, there is no evidence that Apple provides, or has ever provided, this type of "access" to other developers. Instead, all developers have access to iOS through the terms of the DPLA, which are equally applicable to Epic. The

terms of the DPLA are Apple's "normal course of business," and they do not allow Epic the special type of access it demands here.

413. Therefore, it would be not be feasible for Apple to change the design of iOS and the App Store.

e. Epic Lacks Standing to Bring an Essential Facility Claim Based on Its Alleged Market Definition[24]

414. Finally, even if Epic could otherwise satisfy the elements of an essential facility claim, its claim fails for an alternative reason: Epic does not compete with Apple in any market that comprises or is "controlled" by operating systems, including iOS, and thus lacks standing.

415. Only *competitors* of the defendant may assert essential facility claims. *Ferguson v. Greater Pocatello Chamber of Commerce, Inc.*, 848 F.2d 976, 983 (9th Cir. 1988). Specifically, Epic must prove that it is a competitor of Apple "in the field of the facility itself or in a vertically related market that is controlled by the facility." *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1357 (Fed. Cir. 1999).

416. In its capacity as a "consumer" of iOS (i.e., a developer), Epic has no standing to bring an essential facility claim.

417. Nor can Epic proceed as a "competitor" of Apple's, because Epic does not compete with Apple to provide access to iOS, nor does Epic allege otherwise.

418. Courts have regularly rejected essential facility claims brought by plaintiffs who were potential users that were not allowed to license patented or copyrighted technology. *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1356–57 (Fed. Cir. 1999); *see also Interface Grp., Inc. v. Mass. Port Auth.*, 816 F.2d 9, 12 (1st Cir. 1987) (agency operating airport did not compete with charter airline that was denied access to a terminal and maintenance of its choice); *Garshman v. Universal Res. Holding, Inc.*, 824 F.2d 223 (3d Cir. 1987) (pipeline not obliged to sell space to gas explorers with whom it was not in competition). That principle applies *a fortiori* here, where Epic was allowed to access Apple's intellectual-property-protected iOS (prior to its breach) pursuant to the DPLA's terms and conditions.

419. Epic contends that the essential facility doctrine affords standing to plaintiffs who are presently unable to compete with a defendant by virtue of that defendant's denial of access to an essential facility. But all of the cases suggesting that would-be competitors have standing to bring essential facilities claims involved claims by actual competitors or former competitors driven out of business due to their alleged inability to access an essential facility. *See MCI Commc'ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1092 (7th Cir. 1983) (claims brought by actual competitors of defendant); *Alaska Airlines, Inc. v. United Airlines, Inc.*, 948 F.2d 536, 538 (9th Cir. 1991) (same); *Hecht v. Pro-Football, Inc.*, 570

[24] Standing to bring an essential facility claim is addressed in § 8.1, pages 70–72 of the Joint Elements Submission.

F.2d 982, 985 (D.C. Cir. 1977) (claims brought against owners of NFL team by a rival group of promoters who tried but failed to obtain a competing football franchise because they could not gain access to the city's football stadium). Epic does not allege—much less provide evidence to show—that it was driven out of business based on Apple's conduct here. Epic therefore lacks standing to bring an essential facility claim based on its own product market. *See Ferguson v. Greater Pocatello Chamber of Commerce, Inc.,* 848 F.2d 976, 982–83 (9th Cir. 1988) (holding that a university renting its stadium to one producer of trade shows was not required to rent to other trade show producers precisely because the plaintiffs and defendant were not in competition).

C. Sherman Act Section 1 (Epic Counts 3, 5, and 6)

420. In addition to Section 2, Epic brings claims under Section 1 of the Sherman Act.

421. The core distinction between Section 2 monopolization claims and Section 1 claims is that Section 1 of the Sherman Act proscribes only "concerted action that restrains trade." *Am. Needle, Inc. v. Nat'l Football League*, 560 U.S. 183, 190 (2010). The distinction is material, and the requirement of concerted action a significant one, because the Sherman Act "treat[s] concerted behavior more strictly than unilateral behavior." *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 768 (1984).

422. Epic's claims under Section 1 must therefore all be evaluated through the lens of concerted activity—only if Epic can show coordinated activity among market participants may it take advantage of the standard for liability under Section 1.

ii. Sherman Act Section 1 – Tying (Epic Count 6)[25]

423. Count 6 of Epic's complaint alleges that Apple unlawfully ties iOS App Distribution services (the alleged tying product market) to iOS In-App Payment Processing ("IAP") services (the alleged tied product market). Dkt. 1 ¶¶ 233–45. Epic argues that the terms of the DPLA constitute an unlawful tying arrangement, because developers who distribute their apps through the App Store and who wish to offer digital in-app transactions on their apps must use IAP to conduct transactions with iOS users. *See generally id.* Epic contends that the alleged tying arrangement should be condemned under both the *per se* rule and the rule of reason.

424. Epic's Section 1 tying claim fails at the outset because it relies on an improper market definition. Properly defined, there are not separate markets for iOS App Distribution services and IAP, but rather a single market for digital game transactions. *See supra* § II.B.ii (¶¶ 31–79). Epic's tying claim is untenable under the proper market definition, because there can be no tying claim where there is only one relevant product market at issue. *See Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006).

[25] The elements of a tying claim are addressed in § 6, page 34 of the Joint Elements Submission.

425. Even taking Epic's tying claim on its own terms, it still has no merit. IAP is not a separate product from the App Store's distribution services, much less on that Apple has ever made separately available; rather, it is an integrated functionality *within* those services. No demand exists for IAP that is separate from distribution via the App Store, and thus there can be no "tie" between IAP and the App Store. Moreover, Epic is not coerced into using IAP—developers distributing apps through the App Store are free to monetize their apps in a variety of ways that do not involve an in-app purchase. And finally, the evidence shows that the App Store and its IAP functionality are procompetitive, not anticompetitive. Epic's tying claim fails.

b. Legal Principles[26]

426. Tying involves the linking of two separate products from two separate product markets. *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006). In a tying arrangement, a party "conditions the sale of one product (the tying product) on the buyer's purchase of a second product (the tied product)." *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 912 (9th Cir. 2008). "[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 Par.*, 466 U.S. at 12; *see also Aerotec Int'l, Inc. v. Honeywell Int'l Inc.*, 836 F.3d 1171 (9th Cir. 2016) ("A tie only exists where the defendant improperly imposes conditions that explicitly or practically require buyers to take the second product if they want the first one." (quotation marks omitted)); *Golden Boy Promotions LLC v. Haymon*, 15-CV-3378, 2017 WL 460736, at *7 (C.D. Cal. Jan. 26, 2017) ("[T]he main question is whether the defendant has made the first product effectively unavailable to those who do not buy its second product." (quotation marks omitted)); *Nicolsi Distrib., Inc. v. FinishMaster, Inc.*, No. 18-CV-3587, 2019 WL 1560460, at *8 (N.D. Cal. Apr. 10, 2019) ("Because [the plaintiff] does not, and admittedly cannot, allege that [the defendant] conditioned the body shops' purchase of paint on their purchase of supplies, [the plaintiff's] tying claims fail as a matter of law.").

427. Tying arrangements are evaluated under Section 1 of the Sherman Act using either *per se* or rule of reason analysis. *See Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 29 (1984). The *per se* rule that applies to tying claims is distinct from the *per se* rule that applies to other antitrust claims. Courts have "[c]ome to see that arguable tie-ins are to be found everywhere, [and] that most of them serve legitimate objectives without threatening competitive vitality in the second market or anywhere else and without even harming buyers." 17 Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1701c (4th ed. 2020 supp.). As a result, the tying "*per se*" rule is "most peculiar"; for instance, even when tying is treated as *per se* illegal, "the Supreme Court has almost always been willing to consider a defendant's offered justifications." *Id.* ¶¶ 1701c, 1760(b); *see also Viamedia, Inc. v. Comcast Corp.*,

[26] The elements of a *per se* and a rule-of-reason tying claim are addressed in §§ 6.2 and 6.3, pages 37–39, 49–50 of the Joint Elements Submission.

951 F.3d 429, 468 (7th Cir. 2020); *Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1348 (9th Cir. 1987) ("We have recognized that antitrust defendants may demonstrate a business justification for an otherwise per se illegal tying arrangement.").

428. Under the *per se* rule, "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) (quotation marks omitted). Additionally, "[u]nder Ninth Circuit law," a plaintiff must show that the tie has a "pernicious effect on competition and lack of . . . any redeeming virtue." *Spindler v. Johnson & Johnson Corp.*, No. 10-CV-1414, 2011 WL 13278876, at *4 (N.D. Cal. 2011) (quoting *In re eBay Seller Antitrust Litig.*, 545 F. Supp. 2d 1027, 1033–34 (N.D. Cal. 2008)); *see also Siegel v. Chicken Delight*, 448 F.2d 43, 47 (9th Cir. 1971).

429. If a tying claim does not fall within the *per se* framework, it is analyzed under the rule of reason, under which the plaintiff must establish four elements to carry its burden on the first step of the analysis. These elements are similar to those that must be established under the *per se* rule. First, it must prove that "two separate product markets have been linked" through the alleged tying of two separate and distinct products. *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 21 (1984). Second, it must show "the existence of a tie" by showing that the defendant "explicitly or implicitly imposes conditions linking the sale of a tying product with the sale of the tied product." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016). Third, it must prove that the defendant possesses market power in the relevant tying product market and that it was thereby "'coerced' into buying the tied products from the defendant." *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 900 (9th Cir. 2008); *see also Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 46 (2006) ("[I]n all cases involving a tying arrangement, the plaintiff must prove that the defendant has market power in the tying product."); *Paladin Assocs. v. Mont. Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003) ("Essential to . . . a tying claim is proof that the seller *coerced* a buyer to purchase the tied product."). And finally, it must show that the alleged tie "has a substantial anticompetitive effect that harms consumers" in the relevant tied product market. *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020); *see Brantley v. NBC Universal, Inc.*, 675 F.3d 1192, 1200 (9th Cir. 2012) (stating that plaintiff must show "an 'actual adverse effect on competition' caused by the tying arrangement" in the tied market).

430. The principal distinction between the *per se* rule and the rule of reason is that under the *per se* rule, if the plaintiff establishes the four requisite elements, the tie is unlawful unless the defendant's justifications are sufficient to establish an affirmative defense. But under the rule of reason, establishing the same four elements satisfies only the plaintiff's burden at the first step of the burden-shifting framework. The burden then shifts to the defendant "to show a procompetitive rationale for the restraint." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020) (quoting *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018)); *accord County of Tuolumne v. Sonora Cmty. Hosp.*, 236 F.3d 1148, 1159 (9th Cir. 2001). If the defendant makes that showing, the burden shifts back once again to the plaintiff, who must "show that an alternative is substantially less restrictive *and* is virtually as effective

in serving the legitimate objective without significantly increased cost." *County of Tuolumne*, 236 F.3d at 1159 (quotation marks omitted).

c. The *Per Se* Rule Is Inapplicable to This Case[27]

431. Because the elements of the *per se* rule and the rule of reason largely overlap—and because Epic cannot establish any of them—the question of what framework applies to Epic's tying claim is somewhat academic. To the extent the framework affects the disposition of the case, however, the rule of reason, and not the *per se* rule, applies to Epic's tying claim.

432. The categories of conduct condemned *per se* are "narrow." *Texaco Inc. v. Dagher*, 547 U.S. 1, 8 (2006). *Per se* treatment is reserved for restraints that, "after considerable experience," *Broad. Music, Inc. v. Columbia Broad. Sys., Inc.*, 441 U.S. 1, 9 (1979), have been found to "always or almost always . . . tend to restrict competition and decrease output," *Ohio v. Am. Express Co*., 138 S. Ct. 2274, 2283 (2018). For instance, "horizontal territorial limitations" are one of the few "classic examples of a per se violation" meriting an exception to the standard rule of reason analysis. *United States v. Topco Assocs., Inc.*, 405 U.S. 596, 608 (1972). By and large, however, the rule of reason should govern antitrust tying claims, *particularly* in cases involving business models or arrangements without "close parallel[s] in prior antitrust case," because "simplistic application of per se tying rules carries a serious risk of harm." *United States v. Microsoft*, 253 F.3d 34, 89 (D.C. Cir. 2001); *see FTC v. Ind. Fed'n of Dentists*, 476 U.S. 447, 458–59 (1986) ("[W]e have been slow . . . to extend per se analysis to restraints imposed in the context of business relationships where the economic impact of certain practices is not immediately obvious.").

433. As the Ninth Circuit recently emphasized, "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.'" *FTC v. Qualcomm Inc.*, 969 F.3d 974, 990–91 (9th Cir. 2020) (quoting *United States v. Microsoft*, 253 F.3d 34, 91 (D.C. Cir. 2001)). This statement aligns with the D.C. Circuit's holding in *United States v. Microsoft* that in cases "involv[ing] software that serves as a platform for third-party applications," courts should evaluate alleged ties under "the rule of reason, rather than per se analysis." 253 F.3d at 84, 89.

434. Moreover, when there are "plausible arguments that a practice enhances overall efficiency, and makes markets more competitive, *per se* treatment is inappropriate, and the rule of reason applies." *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1155 (9th Cir. 2003).

435. Both the Ninth Circuit and the D.C. Circuit have expressed deep concern that "wooden application of per se rules" to "platform software markets" could "cast a cloud over platform innovation." *United States v. Microsoft*, 253 F.3d 34, 94–95 (D.C. Cir. 2001); *see FTC v. Qualcomm*, 969 F.3d 974, 991 (9th Cir. 2020); *see also In re: Cox Enters.*, 871 F.3d 1093, 1102 (10th Cir. 2017) ("Courts have also acknowledged that some industries or

[27] Application of the *per se* rule is addressed in § 6.1, page 34 of the Joint Elements Submission.

products are sufficiently distinct that per se treatment is inappropriate. This is especially true in the world of technology, where courts are often unfamiliar with the products and market structure, and thus can't be certain of the potential for anticompetitive effects."); Rachel S. Tennis & Alexander Baier Schwab, *Business Model Innovation and Antitrust Law*, 29 Yale J. on Reg. 307, 319 (2012) (explaining that "treat[ing] novel products or business practices as anticompetitive" can have long-lasting negative effects in technology markets, where innovation "is essential to economic growth and social welfare" and "an erroneous decision will deny large consumer benefits").

436. Although the required use of a platform's proprietary payment solution for digital transactions is common in the industry (even beyond simply digital game transactions), no court has ever determined that such an arrangement constitutes tying, much less *per se* unlawful tying. And for good reason: These arrangements have had significant procompetitive effects, both in the game industry and the app industry more broadly. FOF ¶¶ 680–98; *see supra* § III.B.ii.d (¶¶ 352–67); *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877, 894 (2007) (holding that *per se* rule should be rejected where alleged restraint could have "either procompetitive or anticompetitive effects"); *see also* 17A Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1703g (4th ed. 2020 supp.) (recognizing "[m]ajor beneficial possibilities" of tying arrangements, including "protecting quality, lowering costs or increasing value, increasing price competition, aiding entry, or rewarding a valuable patent").

437. Indeed, the Supreme Court has been *narrowing*, not expanding, the categories of conduct to which the *per se* rule applies. *See, e.g.*, *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, 551 U.S. 877, 899–900 (2007) (overruling precedent holding that vertical price restraints should be evaluated under the *per se* rule); *Nat'l Collegiate Athletic Ass'n v. Bd. of Regents of Univ. of Oklahoma*, 468 U.S. 85, 100–01 (1984) (carving out exception to the general rule that horizontal price restraints should be evaluated under the *per se* rule).

438. Application of the rule of reason here also is consistent with economic literature authored by Epic's own expert. In 2004, Dr. Evans coauthored an article arguing that "modern economic thinking supports a rule of reason approach toward tying," rather than a *per se* approach. Christian Ahlborn et al., *The Antitrust Economics of Tying: A Farewell to Per Se Illegality*, 49 Antitrust Bulletin 287, 289–90 (2004). The authors explain that "the principal implication of several decades of economic investigation on the competitive effects of tying is that there should be *no* presumption on the part of competition authorities that tying and bundling are anticompetitive, even when undertaken by firms with monopoly power." *Id.* at 329.

439. Epic asks the Court to break new ground—or perhaps more accurately, return to the stone age of antitrust law—and invalidate as *per se* unlawful Apple's business practices. But the practices challenged here are light years away from being properly categorized as *per se* anticompetitive. In these circumstances, *Qualcomm* and *Microsoft* require the Court to reject Epic's attempt to invoke the *per se* rule. Epic's tying claim must instead be analyzed under the rule of reason.

d. iOS App Distribution and IAP Are Not Separate Products[28]

440. Epic's claim fails under either the rule of reason or the *per se* rule because Epic cannot establish a prerequisite of any tying claim: that the alleged tying product (iOS app distribution services) and the alleged tied product (IAP) are "separate and distinct product[s]." *Rick-Mik Enters., Inc. v. Equilon Enters. LLC*, 532 F.3d 963, 974 (9th Cir. 2008); *United States v. Microsoft Corp.*, 253 F.3d 34, 85 (D.C. Cir. 2001) ("[U]nless products are separate, one cannot be 'tied' to the other."). Two principles are relevant in this case: integration and consumer demand.

441. *First*, as this Court has previously explained, two items are "a single product" if they are "an 'integrated service.'" *Epic Games, Inc. v. Apple Inc.*, No. 20-CV-5640-YGR, 2020 WL 5993222, at *16 & n.28 (N.D. Cal. Oct. 9, 2020). After all, "[a]lmost every product can be viewed as a package of component products: a pair of shoes, for example, as a package consisting of a left shoe and a right shoe; a man's three-piece suit as a package consisting of a jacket, vest, and pants; a belt as a package consisting of a buckle and a strap." *Jack Walters & Sons Corp. v. Morton Bldg., Inc.*, 737 F.2d 698, 703 (7th Cir. 1984). To avoid absurd results, courts must, therefore, ensure that the two allegedly tied items are not merely "a package of components" that provide a single service to the customer. *Id.*; *see Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 39 (1984) ("[T]here must be a coherent economic basis for treating the tying and tied products as distinct" because "[a]ll but the simplest products can be broken down into two or more components that are 'tied together' in the final sale.").

442. To the extent Epic argues, through its experts, that "integration" is not a useful concept in the context of alleged tying, the law is otherwise. As established above, a finding that two products are integrated is in fact *legally* dispositive of a tying claim. Whatever the views of Epic's *economic* experts, they cannot override the clear *legal* principles that make integration a controlling factor in a tying claim.

443. *Second*, aside from integration, the other way that courts evaluate whether two items are separate products is based on "the character of the demand for the two items." *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 19 (1984). 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]." *Id.* at 21–22.

444. With respect to Epic's claims, this separate-demand requirement means Epic must prove that some users (i.e., customers and developers) *want* IAP—which is not even functional outside of iOS—as an independent product separate from the App Store, and that "separating them is physically and economically possible." 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1743 (4th ed. 2020).

---

[28] The requirement of two products is addressed in § 6.2.1, pages 40–41 of the Joint Elements Submission.

445. To evaluate "consumer demand for the tied product separate from the tying product," courts "examine[] direct and indirect evidence." *Rick-Mik Enters., Inc. v. Equilon Enters. LLC*, 532 F.3d 963, 975 (9th Cir. 2008). "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." *Id.* (citations omitted). Where "competitive firms always bundle the tying and tied goods," then they are not two separate products, but "a single product." *Id.*

446. The *Microsoft* court elaborated on this point, noting that the separate-demand test is only "a rough proxy" for evaluating whether a tying arrangement is "welfare-enhancing." *United States v. Microsoft Corp.*, 253 F.3d 34, 87 (D.C. Cir. 2001). In the abstract, there "is always direct separate demand for products: assuming choice is available at zero cost, consumers will prefer it to no choice." *Id.* But when "the entire 'competitive fringe' engages in the same behavior as the defendant," there are likely "strong net efficiencies," and "the tying and tied products should be declared one product." *Id.* at 88 (quoting 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1744c4 (1996)).

e. IAP Is an Integrated Feature of iOS and the App Store

447. The evidence establishes that IAP is an integrated functionality of the App Store's facilitation of digital transactions. FOF ¶¶ 651–53; *see United States v. Microsoft Corp.*, 253 F.3d 34, 93 (D.C. Cir. 2001) (noting that "integration [is] common" among technological products and services). As the Ninth Circuit explained in *Rick-Mik Enterprises, Inc. v. Equilon Enterprises, LLC*, in the context of credit-card processing services and franchise arrangements, if payment processing services are "an essential ingredient of the [tying product's] formula for success, there is but a single product and no tie in exists as a matter of law." 532 F.3d 963, 974 (9th Cir. 2008) (quotation marks omitted). The tying product and the "method of processing [payment] transactions are not separate products, but part of a single product." *Id.* And, like in franchise arrangements—which provide for "signs, advertising, marketing, appearance, as well as methods of delivery and payment," each of which is "part and parcel of a franchise," *id.*—IAP is but one component of the full suite of services offered by iOS and the App Store, FOF ¶ 651.

448. IAP is part of a comprehensive set of services provided by the App Store, and offers procompetitive benefits to both consumers and developers. FOF ¶¶ 680–98. For instance, for in-app purchases, the ability to deliver and charge for digital content is what unlocks the "freemium" business model, whereby developers offer an app for free but charge consumers a premium to enable certain features within the app. FOF ¶ 694. It is this model that Epic has used to great effect with *Fortnite*. FOF ¶ 696. IAP (for in-app purchases) and Apple's payment mechanism for paid apps are what allow Apple to track the revenue generated by each developer and collect the appropriate commission. FOF ¶ 680–82. If Apple were not able to collect a commission through the required use of IAP, then it would receive no revenue at all for any app that uses the freemium model—despite the significant support Apple provides at every stage of the app's development. FOF ¶ 681.

449. As noted previously, the App Store is a two-sided transaction platform, meaning that the App Store is "best understood as supplying *only one product*—transactions—which is jointly consumed by a [consumer] and a [developer]." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286 n.8 (2018) (emphasis added). Thus, the App Store does not provide app distribution services *and* in-payment processing, but instead provides a *single* product: digital game transactions. The nature of the product that Apple supplies therefore necessarily means that IAP is an integrated feature of this transaction. Just as "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," 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1741 (4th ed. 2020), digital game transactions are a critical aspect of what consumers and developers obtain when they deal with the App Store, and IAP is simply one part of that single product.

450. The integration of IAP into the App Store has many other benefits to users of the platform as well, further supporting the conclusion that it is an integrated feature of the App Store. For instance, IAP provides a secure and centralized system for recording sales, managing payments to developers, and collecting commissions from developers. FOF ¶ 681. It also provides consumers with a seamless ecosystem that syncs across family members and devices, detects security or fraud threats, and permits purchases to be restored on new devices. FOF ¶ 688. And it allows consumers to provide their private financial information to a single trusted company—Apple—rather than countless third-party payment processors of uncertain repute. FOF ¶ 685. Developers, too, directly benefit from IAP, which assists them with currency conversion and tax-law compliance and performs fraud and credit-worthiness checks on their behalf. FOF ¶ 692. For all these reasons and more, IAP is an integrated functionality within the App Store's broader set of services, not a standalone product. *Cf. Serv. & Training, Inc. v. Data Gen. Corp.*, 737 F. Supp. 334, 343 (D. Md. 1990) (rejecting tying claim because alleged tied product was "one feature of [defendant's] integrated and unified product"). Just as in *Rick-Mik*, where "the method of receiving and processing credit transactions [was] an integral part of the franchise's operation," 532 F.3d 963, 974 (9th Cir. 2008), here, IAP is equally an "integral part" of the App Store's operations.

451. This conclusion is confirmed by a survey of the App Store's "competitive fringe." *United States v. Microsoft Corp.*, 253 F.3d 34, 88 (D.C. Cir. 2001). Nearly all competing platforms, including Google Play, the PlayStation Store, the Nintendo eShop, the Microsoft Store, Steam, and the Samsung Galaxy Store, have also integrated distribution, content delivery, and payment functionalities. FOF ¶¶ 697–697.5; *see also* Dkt. 118 at 18. The only significant outlier is EGS, on which payment was an integrated feature of EGS until December 2019, after the preliminary planning for Project Liberty and this eventual litigation was already well under way. FOF ¶ 251.4. Thus, where, as here, there is "bundling by all competitive firms," then "the tying and tied products should be declared one product." *Microsoft*, 253 F.3d at 88; *cf. In re: Cox Enters., Inc.*, 871 F.3d 1093, 1109 (10th Cir. 2017) (holding that the bundling of set-top-boxes to premium cable was not a per se tie where "all cable companies rent set-top-boxes to consumers," because that fact suggests that bundling "is simply more efficient than offering them separately").

452. The integration of IAP into the App Store is also made apparent by the fact that Epic has not challenged the commission that Apple charges for the distribution of paid apps or the mechanism that collects these payments, which is executed through a different set of APIs from IAP. Epic apparently has no complaint with Apple collecting a commission for licensing of its intellectual property for the *distribution* of apps; its complaint centers on the mechanism for delivering (and charging for) content within those apps. Yet Epic's focus on IAP to the exclusion of the APIs used for paid apps is simply arbitrary—both features are integral components of how the App Store operates, and neither is a distinct "product" that Apple offers outside the context of the App Store. To speak of a consumer's payment experience through the App Store as a distinct "product" is just as irrational as calling a retailer's point of service a separate "product," and Epic's effort to avoid the analogy by not mentioning paid apps fails.

453. Accordingly, IAP is an integrated feature of iOS and the App Store, and not a separate product.

f. There Is No Separate Demand for IAP

454. Similarly, no evidence was presented showing that demand exists for IAP as a standalone product.

455. As an initial matter, Epic's argument mischaracterizes IAP and its function. Epic contends that IAP is a mere "payment processor," and thus argues that the Court should assess demand for an alternative payment processor. Dkt. 1 ¶ 242. But this description of IAP is demonstrably incorrect. As described above, IAP is much more than a payment processor—IAP consists of the entire technological infrastructure that delivers digital content (like in-game upgrades or features) from the developer to the user. FOF ¶ 651. That process *necessarily* runs through iOS, because the content is being delivered and downloaded to the consumers' iPhone or iPad. The actual payment for the product is one component of those services, but the entire process of executing a digital transaction between a consumer and a developer is, in reality, what IAP facilitates.

456. Payment processing is thus simply an input into the larger bundle of services provided by the IAP system. FOF ¶ 651. Indeed, IAP does not itself even *process payments*—that function is performed by a third-party settlement provider like Chase Bank with which Apple contracts. *Id.* And unlike the purported alternatives that Epic proposes (e.g., PayPal), Apple has never tried to market the technology for use on other digital transaction platforms, and Epic does not contend otherwise. FOF ¶ 656.

457. But even if the Court were to focus narrowly—and incorrectly—on the limited subset of payment functions performed by IAP, there is still no separate demand for an alternative payment processor. In the but-for world where developers could use an alternative processor, Apple would still be contractually entitled to its commission on any purchase made within apps distributed on the App Store. Thus, so long as the alternative processor charged a non-zero commission or fee for its services, no economically rational developer would choose to use the alternative processor, because on each transaction, they would *still*

have to pay Apple its commission, *and* they would have to pay the alternative processor a commission for its services. FOF ¶ 659.

458. For that reason, Epic's "evidence"—obtained through its willful breach of the DPLA—about the number of iOS consumers who used Epic direct payment when given the opportunity after the "hotfix" is unpersuasive. *See* Dkt. 118 at 25 ("It is not surprising that some customers would choose competing payment services if they provided lower prices offered only because of this non-payment."). 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. FOF ¶ 658. Epic's reliance on this evidence thus "conflates competition on the merits with Epic Games' goal of avoiding Apple's 30%." Dkt. 118 at 25. Even under Epic's conception of the market, IAP is not a distinct product. 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.

g. The Two "Products" Are Not Tied[29]

459. Even if Epic could demonstrate that IAP and iOS app distribution were two separate products—and it cannot—its tying claim would still fail (under either the *per se* rule or the rule of reason) because it cannot establish the "most fundamental requirement" of a tying claim: "the existence of a tie." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016).

460. Epic must show that the "sale of the desired ('tying') product [was] conditioned on purchase of another ('tied') product." *Id.*; *see also* 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1752b (4th ed. 2020) (defining a tie as the improper imposition of "conditions that explicitly or practically require buyers to take the second product if they want the first one"). This condition must "require[] customers to take the defendant's product B in order to get its A—thereby foreclosing, to that extent, rival B suppliers from access to those customers." 17D Areeda & Hovenkamp, *supra*, ¶ 1752c; *see also Image Technical Servs., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 615 (9th Cir. 1990) (similar).

461. While a tying condition "need not be spelled out in express contractual terms," it is not enough for a plaintiff to show the defendant's conduct amounted to a "'de facto' condition." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1178–79 (9th Cir. 2016). Consequently, "technological interrelationship among complementary products" is insufficient to establish a tie. *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 542 (9th Cir. 1983); *see also Apple iPod iTunes Antitrust Litig.*, No. 05-CV-37, 2009 WL 10678940, at *5 (N.D. Cal. Oct. 30, 2009) (that technological products are developed, and are optimally used, in conjunction with one another does not establish a tie).

462. Epic cannot show such a tying condition, because none exists. Developers can distribute apps through the App Store without using in-app purchase options for their apps, and thus

[29] The requirement of a tie is addressed in § 6.2.2, page 42 of the Joint Elements Submission.

can distribute apps without *using* or *paying* for IAP. The DPLA requires developers to agree to various terms and conditions prior to distributing apps through the App Store, such as a requirement that the developers not "violate, misappropriate, or infringe any Apple" intellectual property. FOF ¶ 106.2. But there is no requirement that developers must use IAP in order to distribute apps through the App Store, because there is no requirement that developers offer in-game digital transactions. Indeed, the great majority (83%) of apps distributed through the App Store are entirely free and thus do not use IAP *at all*. FOF ¶ 551. There can be no tying claim when the majority of purchasers of the tying product (here, developers) do not even *receive* the tied product. Accordingly, there is no contractual tie nor a price tie.

463. It is true that *if* a developer wishes to monetize its iOS app through in-app purchases facilitated by the App Store, *then* it must use IAP. But Apple does not force developers to monetize their apps through in-app purchases. Instead, developers like Epic are free to monetize (or not monetize) their apps in the App Store in any number of ways that do not involve IAP, including through up-front payment or selling advertising space within the apps. FOF ¶ 93. The fact that some developers might prefer to monetize their apps through in-app purchases rather than through advertising does not mean that the distribution and IAP are tied, only that developers often, when given the choice, elect to use Apple's IAP service rather than alternative means of monetization.

464. Epic incorrectly contends that the fact that developers like Epic could adopt alternative monetization strategies like advertising does not show that there is no tie, because (it claims) in-game ads would create a negative experience for players. But as a legal matter, a tie does not exist just because a plaintiff believes that it would be better off if the defendant altered the terms on which its services were offered. Rather, a tie exists only if the defendant actually *requires* the plaintiff to "take the defendant's product B in order to get its A." 17D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1752c (4th ed. 2020)). Apple does not require developers to use IAP in order to distribute apps on the App Store, and there therefore is no tie.

465. Moreover, the App Store Review Guidelines explicitly permit developers of cross-platform games to let iOS users access content or other features purchased on other platforms within the iOS app, meaning that iOS users can access all of the content featured on an app available through in-app purchases without ever making a purchase that requires the use of IAP. FOF ¶ 165.1. In no sense, therefore, is the use of IAP a requirement for a developer to distribute apps through the App Store.

466. Epic's business model confirms that the IAP is not tied to the use of the App Store. An iOS user who plays *Fortnite* may elect to purchase V-Bucks through the App Store, in which case the transaction will be processed through IAP, as contemplated by the DPLA. That same user, however, could purchase V-Bucks on another platform—his PC or his PlayStation—without going through IAP, yet still use those V-Bucks to purchase additional in-app content on his iPhone. FOF ¶ 495.2. The consumer could even access EGS through the Safari web browser on his iPhone and purchase V-Bucks directly from Epic without using IAP, all on an iOS device. *Id.* From the consumer's perspective, it is

immaterial whether IAP is used to process his payment, because he is able to use his V-Bucks across all versions of *Fortnite* that he has downloaded. Thus, Epic is never compelled to use IAP.

h. Epic Is Not Coerced into Using IAP[30]

467. For similar reasons, Epic cannot demonstrate that Apple coerces it into using IAP—a required element under either the *per se* rule or the rule of reason. To prove coercion, Epic must prove by a preponderance of the evidence that Apple exploited its alleged control over the tying product to force Epic into the purchase of the tied product. *See* ABA Model Civil Jury Instrns. Ch. 2.E.7 (2016).

468. This requirement is twofold. First, Epic must prove that Apple has market power in the market for the tying product. *See Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 46 (2006). Second, Epic "must present evidence that the defendant went beyond persuasion" and in fact "coerced or forced its customer to buy the tied product in order to obtain the tying product." *Paladin Assocs., Inc. v. Montana Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003); *see also It's My Party, Inc. v. Live Nation, Inc.*, 811 F.3d 676, 684 (4th Cir. 2016) (rejecting argument that "tying occurs any time a seller who has market power over product A *offers* it for sale together with product B").

469. To prove market power, Epic must show the defendant had "the power to control prices or exclude competition" in the tying product market. *Paladin Assocs.*, 328 F.3d at 1158; *see also Rick-Mik Enters., Inc. v. Equilon Enters. LLC*, 532 F.3d 963, 972 (9th Cir. 2008) ("If [the defendant] lacks market power in the [tying product] market, there can be no cognizable tying claim."). "The best way to show" sufficient market power "is to establish directly that the price of the tied package is higher than the price of components sold in competitive markets." *Parts and Elec. Motors, Inc. v. Sterling Elec., Inc.*, 826 F.2d 712, 720 n.7 (7th Cir. 1987). Aside from such direct evidence, Epic may prove market power by showing Apple had a sufficiently high market share such that purchasers do not have alternative sources of the tying product or a reasonably interchangeable substitute. *See supra* § III.C.i.c (¶ 445).

470. Apple's contractual rights cannot be conflated with economic power. A "defendant's economic power [must] be derived from the market, not from a contractual relationship that the plaintiff has entered into voluntarily." *Rick-Mik Enters.*, 532 F.3d at 973*; see also Queen City Pizza, Inc. v. Domino's Pizza, Inc.*, 124 F.3d 430, 443 (3d Cir. 1997) ("[W]here the defendant's 'power' to 'force' plaintiffs to purchase the alleged tying product stems not from the market, but from plaintiffs' contractual agreement to purchase the tying product, no claim will lie."). In other words, "courts must attempt to ascertain a defendant's economic position in the relevant market, rather than its power pursuant to a particular contract, when considering whether a defendant has market power." *Maris Distrib. Co. v. Anheuser-Busch, Inc.*, 302 F.3d 1207, 1219 (11th Cir. 2002).

[30] Coercion is addressed in § 6.2.3, pages 43–44 of the Joint Elements Submission.

471. Apple plainly does not have market power in the properly defined market for digital game transactions. *See supra* § III.B.i.a (¶¶ 229–36). Thus, market definition is yet again fatal to Epic's claim.

472. Even if the relevant tying product is iOS app distribution and the tied product is iOS in-app payment, Apple still lacks market power. As set forth above, *see supra* § III.B.i.a (¶¶ 237–45), Apple lacks market power in any alleged primary market for iOS app distribution because both consumers and developers have alternatives to the App Store and IAP. Without market power in the alleged primary market, Apple has no power to coerce developers into purchasing a tied product they do not want.

473. In addition to market power, Epic must demonstrate that it actually "was 'coerced' into buying the tied products from the defendant." *Cascade Health Sols. v. PeaceHealth*, 515 F.3d 883, 915 (9th Cir. 2008). Epic cannot demonstrate coercion, because as noted above, Apple does not "force[]" Epic to use IAP. *Paladin Assocs., Inc. v. Mont. Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003). As explained, there are many monetization strategies available to Epic that would permit it to distribute apps on the App Store *without* using IAP. Epic is thus "free to take [app distribution] by itself" and decline to use IAP. *Northern Pac. R. Co. v. United States*, 356 U.S. 1, 7 n.4 (1958). The fact that Epic might prefer to monetize its apps through in-app purchase rather than through advertising show only the value of the allegedly tied product and the desire of many consumers to obtain the tied product in a bundle—it does not show that Epic had no choice in the matter.

474. Epic's argument, in essence, is that it is entitled to conduct digital game transactions through Apple's platform in precisely the manner it wants to, and that if Apple's policies restrict it in any way from doing so, then that is illegal coercion. But Epic's "freemium" business model on the App Store exists in the first place only because Apple's platform facilitated the business model by making it possible to deliver and charge for digital content within native iOS apps distributed through the App Store. Now that Epic has found success using this model, it claims that the same policies that allowed it to thrive in the first place are "coercive." But it is not coercive for Apple to demand that Epic adhere to the terms of its longstanding licensing agreement, without which Epic's iOS version of *Fortnite* would not even exist.

i. There Is No Foreclosure of Any Significant Share of the Relevant Market

475. In order to prevail on its *per se* theory of tying, Epic must establish that "a total amount of business, substantial enough in terms of dollar-volume so as not to be merely *de minimis*, is foreclosed to competitors by the tie." *Fortner Enters., Inc. v. U.S. Steel Corp.*, 394 U.S. 495, 501 (1969). In other words, the foreclosed business must represent either "a substantial dollar-volume [or] a substantial portion of the relevant market." *Datagate, Inc. v. Hewlett-Packard Co.*, 60 F.3d 1421, 1425 (9th Cir. 1995). Epic has failed to satisfy this element.

476. There is no foreclosure here because the DPLA does not prevent developers from monetizing their game apps or executing digital transactions in ways that do not involve

IAP. iOS developers are free to offer their apps on platforms other than iOS, as most do. FOF ¶¶ 351–52. Even on iOS, developers may charge an upfront fee for their apps, use advertising, or distribute their app as a web app through the Safari web browser (including through new game streaming platforms). FOF ¶¶ 93, And iOS [redacted] permits a "cross-wallet" whereby users can purchase virtual currency on other platforms (e.g., EGS) and spend that currency through an iOS app without going through IAP. FOF ¶ 255.4. There is thus no "foreclosure" of *any* commerce, because developers and users have myriad ways to execute digital transactions that do not involve IAP.

477. Epic itself has used these alternative options. A majority of iOS *Fortnite* players who make purchases do so *only* on non-iOS platforms and then access that content on their iOS version of *Fortnite*. FOF ¶ 370. Epic also sells V-Bucks through EGS and other platforms that can be spent on iOS without going through IAP. FOF ¶ 367. It also has sold promotional materials inside of *Fortnite*. FOF ¶ 674. As regarding Epic, there plainly is no "foreclosure" of commerce.

478. Indeed, far from foreclosing any share of the market, IAP actually *increases* the size of the digital game transactions market by giving developers different ways in which to execute transactions. FOF ¶ 679. IAP facilitates the existence of the "freemium" and "paymium" models, which enable developers to attract and transact with price-sensitive customers who might want to try out an app before spending more on advanced or special features. *Id.*

479. In sum, none of Apple's conduct here has foreclosed a significant share of the relevant market.

j. The App Store and IAP Are Procompetitive[31]

480. Finally, Epic cannot establish the final element of its tying claim under either the *per se* rule or the rule of reason—that Apple's integrated business model has a "pernicious" or "substantial" anticompetitive effect.

481. Where the *per se* rule applies, a legitimate business justification is an affirmative defense to a tying claim. *See Mozart Co. v. Mercedes-Benz of N. Am., Inc.*, 833 F.2d 1342, 1348 (9th Cir. 1987) ("[A]ntitrust defendants may demonstrate a business justification for an otherwise per se illegal tying arrangement.").

482. Where, however, the rule of reason applies, procompetitive business justifications are considered as part of the burden-shifting analysis, and the ultimate burden rests at all times with Epic. *See infra* § III.C.ii.b (¶¶ 513–15).

483. Regardless of which party bears the burden, however, any alleged tying between app distribution and IAP is redeemed by the significant procompetitive justifications of IAP, outlined above. *See supra* § III.B.ii.d (¶¶ 352–67). For example, Epic's expert stated in a 2013 publication that in order to "increase the welfare" of its consumers, "an ecommerce

[31] Pernicious effect and business justifications are addressed in §§ 6.2.5–6.2.6, pages 46–48 of the Joint Elements Submission.

platform might require merchants to use its payments platform thereby bundling both matchmaking and payment services together . . . [to] make it easier for consumers to pay efficiently." David S. Evans, *Economics of Vertical Restraints for Multi-Sided Platforms*, Competition Policy Int'l, Spring 2013, at 10.

484. Such is the case here. Integrating IAP into the App Store gives consumers a seamless experience, providing a one-stop shop for in-app payment and offering a secure transaction platform. FOF ¶ 687. And developers benefit too, because they can monetize their apps without having to search for payment solutions, and can also benefit from the fact that many of their iOS users will already have a payment profile in place to make purchases on new apps they download. FOF ¶ 691.

485. Whether analyzed under the *per se* rule or the rule of reason, the procompetitive nature of the IAP functionality dooms Epic's tying claim.

iii. Sherman Act Section 1 – Unreasonable Restraint of Trade in the "iOS App Distribution Market" (Epic Count 3)[32]

486. Epic claims in Count 3 that Apple has unreasonably restrained trade in the "iOS App Distribution Market," by "forc[ing] developers to agree to Apple's unlawful terms contained in its [DPLA] and to comply with Apple's App Store Review Guidelines, including the requirement iOS developers distribute their apps through the App Store." Dkt. 1 ¶ 210.

487. This claim fails for the simple yet dispositive reason that Epic has not shown that Apple "agreed" with anyone to restrain trade, as required for a Section 1 claim. The contractual terms of which Epic complains are imposed unilaterally by Apple as a condition of using its intellectual property and other resources, and are applied equally to all developers. Indeed, Epic has labeled the DPLA a "contract of adhesion," Dkt. 1 ¶ 70.

488. But even if Epic could demonstrate such an agreement, its claim would still fail under the rule of reason analysis: Apple does not have market power in the relevant market for digital game transactions, the alleged restraints do not have anticompetitive effects, and in any case, the restraints are supported by multiple strong procompetitive rationales for which Epic has proposed no reasonable less restrictive alternatives.

b. There Is No Concerted Action[33]

489. Section 1 of the Sherman Act proscribes only "concerted action that restrains trade." *Am. Needle, Inc. v. Nat'l Football League*, 560 U.S. 183, 190 (2010). "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) (quotation marks omitted). As a result, a threshold requirement of any Section

[32] The elements of an unreasonable restraint of trade under Section 1 are addressed in § 5.1, page 22 of the Joint Elements Submission.

[33] Concerted action is addressed in § 5.1, page 23 of the Joint Elements Submission.

1 claim is "the existence of an agreement." *Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016).

490. "One way of proving concerted action [under § 1] is by express agreement." *Sun Microsystems Inc. v. Hynix Semiconductor Inc.*, 608 F. Supp. 2d 1166, 1192 (N.D. Cal. 2009); *see also Paladin Assocs., Inc. v. Montana Power Co.*, 328 F.3d 1145, 1153 (9th Cir. 2003) ("[E]xpress 'agreements'" are "direct evidence of 'concerted activity'" and satisfy the first element of a Section 1 claim.).

491. No agreement exists, however, if "[t]here is no 'meeting of the minds'" but rather only a unilateral "command[]" that others merely "comply with." *Costco Wholesale Corp. v. Maleng*, 522 F.3d 874, 898 (9th Cir. 2008). For this reason, courts have rejected Section 1 claims in which the defendant merely promulgated policies or contractual terms to which potential counterparties were required to adhere. *See The Jeanery, Inc. v. James Jeans, Inc.*, 849 F.2d 1148, 1160 (9th Cir. 1988) ("This termination was pursuant to James Jeans' announced policy as reiterated in its conversations with its dealers" and therefore "was unilateral, independent action taken by James Jeans . . ., [a]nd it did not violate section 1"); *Relevent Sports, LLC v. U.S. Soccer Fed'n, Inc.*, No. 19-CV-8359, 2020 WL 4194962, at *7 (S.D.N.Y. July 20, 2020) (U.S. Soccer Federation's compliance with its obligation to follow FIFA policies against sanctioning certain soccer matches was unilateral conduct outside the scope of Section 1); *Baar v. Jaguar Land Rover N. Am., LLC*, 295 F. Supp. 3d 460, 465 (D.N.J. 2018) (a "unilaterally implemented [] Policy" imposed by Jaguar Land Rover on "dealers" was not actionable under Section 1).

492. Here, the only "agreement" Epic can point to is the DPLA, which all developers must agree to in order to obtain a license to use Apple's valuable intellectual property and distribute native iOS apps through the App Store. The terms of the DPLA are not negotiated between Apple and developers, but rather are standardized terms of access to iOS and the developer tools. FOF ¶ 102. If a developer refuses to agree to the terms, Apple will not license its intellectual property, and the developer cannot distribute native iOS apps through the App Store. FOF ¶ 101.

493. As a matter of law, such a unilateral imposition of constraints on a business partner is not an "agreement" within the meaning of the Sherman Act. For instance, "[a] manufacturer . . . generally has a right to deal, or refuse to deal, with whomever it likes, as long as it does so independently." *Monsanto Co. v. Spray–Rite Serv. Corp.*, 465 U.S. 752, 761 (1984). That manufacturer "can announce its resale prices in advance and refuse to deal with those who fail to comply." *Id.* Similarly here, Apple has imposed terms of access (analogous to the pricing terms in *Monsanto*) in advance, "enforce[d]" them against developers, *Baar v. Jaguar Land Rover N. Am., LLC*, 295 F. Supp. 3d 460, 465 (D.N.J. 2018), and refused to deal with developers who do not comply.

494. Epic's Complaint could not be any clearer that Epic and other game app developers "had no involvement in the establishment or enforcement of the allegedly anticompetitive provisions of the contract[]" or Guidelines. *Toscano v. Professional Golfers Ass'n*, 258 F.3d 978, 984 (9th Cir. 2001). As the Complaint states, it is *Apple* that requires developers to agree to the "terms contained in its [DPLA] and to comply with Apple's App Store

Review Guidelines." Dkt. 1 ¶ 210. In other words, Apple "independently set the terms," and game app developers "merely accepted them." *Toscano*, 258 F.3d at 984.

495. In similar circumstances, one court has held that agreements "unilaterally impose[d]" by technology platforms upon developers that "utilize the [platform]" do not constitute concerted action. *Sambreel Holdings LLC v. Facebook, Inc.*, 906 F. Supp. 2d 1070, 1077 (S.D. Cal. 2012) (holding that Facebook's requirement that application developers agree to use only approved advertising partners, with whom Facebook had separate agreements, was not actionable under Section 1). So too here: Apple unilaterally imposed its policies on game app developers like Epic.

496. It would be a misapplication of the antitrust laws to hold that unilaterally imposed terms of an agreement can constitute an unlawful contract or combination under Section 1. The Sherman Act draws a sharp distinction 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 (1984). That is because "[c]oncerted activity inherently is fraught with anticompetitive risk" in that "[i]t deprives the marketplace of the independent centers of decisionmaking that competition assumes and demands." *Id.* at 768–69. Thus, "[t]he meaning of the term 'contract, combination . . . , or conspiracy' is informed by the basic distinction in the Sherman Act between concerted and independent action that distinguishes § 1 of the Sherman Act from § 2." *Am. Needle, Inc. v. Nat'l Football League*, 560 U.S. 183, 190 (2010) (some quotation marks omitted). And Section 1 therefore "applies *only* to concerted action that restrains trade." *Id.* (emphasis added).

497. If the unilateral imposition of contract terms could give rise to a Section 1 claim for unreasonable restraint of trade, the Sherman Act's careful distinction between concerted and unilateral conduct would be eliminated. Distinguishing between competitive and anticompetitive unilateral conduct is a difficult (and costly) task for courts, *see* 19A Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 1902b (4th ed. 2020 supp.), and that is why plaintiffs challenging unilateral conduct must satisfy the more exacting standard of Section 2. It is therefore inappropriate to use the Section 1 standard for liability in a case, such as this one, involving only unilateral conduct by an alleged monopolist.

498. There is no legal support for the assertion that "coercive conduct" by a firm may be treated as an "agreement" for purposes of Section 1. *Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986).

499. *First*, the line of cases suggesting that an "agreement" under Section 1 can be formed by coercive conduct "has been cast into some doubt" by the Supreme Court, *Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986), and should not be treated as good law, *see Blair v. All Am. Bottling Corp.*, No. 86-CV-1426, 1988 WL 150814, at *3 (S.D. Cal. Aug. 9, 1988) (declining to apply coercive-conduct caselaw). Indeed, permitting a plaintiff to establish concerted action by pointing to coercive conduct would run afoul of the Sherman Act's division between unilateral and concerted conduct in precisely the same way that treating a unilateral imposition of contracts terms as "concerted" activity would.

500. *Second*, even if unilateral coercive conduct could uniquely give rise to Section 1 liability, Apple has not engaged in any coercive conduct. The coercive conduct contemplated by cases like *Albrecht v. Herald Co.* involves something "in addition to the 'mere announcement of [a] policy and the simple refusal to deal'" with those who will not comply. 390 U.S. 145, 149 (1968), *overruled on other grounds by State Oil Co. v. Khan*, 522 U.S. 3 (1997). In other words, there must be some *additional* threat or menace to the allegedly coerced party, beyond simply a refusal to deal. *See Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986). Here, however, Apple has never threatened Epic or other game app developers; it "simply warned [them] of its policy and enforced it against" them if they failed to abide by the policy. *Id.* at 1479. The App Store, and Apple's services, "were always available subject to the condition that [it] not be used" to violate Apple policy, such as by circumventing IAP. *Id.*

501. Because Apple unilaterally imposed its policies against game app developers, including Epic, and did not coerce them into any unlawful agreement, Epic's Section 1 concerted-action claim must fail as a matter of law.

c. Epic's Claim Fails Under the Rule of Reason[34]

502. Even if Epic could show that an agreement exists, its claim would fail under the rule of reason's burden-shifting framework applicable to Epic's Section 1 claims.

503. "[T]he 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." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018) (quoting *Copperweld Corp. v. Indep. Tube Corp.*, 467 U.S. 752, 768 (1984)). "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." *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 886 (2007).

Epic Has Not Shown That Apple's Policies Have Anticompetitive Effects[35]

504. Under the rule of reason, "the plaintiff has the initial burden to prove that the challenged restraint has a substantial anticompetitive effect that harms consumers in the relevant market." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018). As discussed above, *see supra* § III.B.i.b (¶¶ 246–83), the conduct on which Epic relies for its antitrust claims cannot be considered anticompetitive or exclusionary as a matter of law.

505. "A plaintiff may prove that a restraint has anticompetitive effect either 'directly or indirectly.'" *FTC v. Qualcomm Inc.*, 969 F.3d 974, 989 (9th Cir. 2020) (quoting *Am. Express*, 138 S. Ct. at 2284). "Direct evidence includes proof of actual detrimental effects on competition, such as reduced output, increased prices, or decreased quality in the

[34] The rule of reason is addressed in § 5.2, page 23 of the Joint Elements Submission.

[35] Anticompetitive effects are addressed in § 5.2.2, pages 28–29 of the Joint Elements Submission.

relevant market." *Id.* (citation and quotation marks omitted). "Indirect evidence involves 'proof of market power plus some evidence that the challenged restraint harms competition.'" *Id.* (quoting *Am. Express*, 138 S. Ct. at 2284). "Allegations that conduct 'has the effect of reducing consumers' choices or increasing prices to consumers do[] not sufficiently allege an injury to competition . . . [because] [b]oth effects are fully consistent with a free, competitive market.'" *Id.* at 990 (quoting *Brantley v. NBC Universal, Inc.*, 675 F.3d 1192, 1202 (9th Cir. 2012)). Epic has not met its burden to show, by either direct or indirect evidence, that Apple's policies have any anticompetitive effect.

506. Epic has introduced no direct evidence of detrimental effects on competition, such as reduced output or increased prices in the relevant market. As explained in detail *supra* § III.B.i.c (¶¶ 284–98), Apple's policies have a decidedly *pro*competitive effect. Indeed, Apple has never increased its commission rate, despite the vastly increased number of digital game transactions since the App Store was launched in 2008, and Apple has in fact reduced the commission rate significantly for most developers, and a further subset of apps.

507. Nor has Epic shown any anticompetitive effects through indirect evidence, because it cannot establish an "essential ingredient in a rule-of-reason case": market power. *Hahn v. Oregon Physicians' Serv.*, 868 F.2d 1022, 1026 (9th Cir. 1988). Apple lacks market power both in the correct relevant market of digital game transactions and in Epic's erroneous "iOS App Distribution" market.

508. Market power under Section 1 requires a lesser showing than monopoly power under Section 2. *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 480 (1992). In the Ninth Circuit, "[c]ourts generally require a 65% market share to establish a prima facie case of market power." *Image Tech Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1206 (9th Cir. 1997), and "a market share of less than 50 percent is presumptively insufficient to establish market power," *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1438 (9th Cir. 1995).

509. As explained *supra* § III.B.i.a (¶¶ 229–36), Apple lacks market power in the relevant market for digital game transactions. Apple's share of the market is, at its most conservative, 37.5%, FOF ¶ 493.2—far below the 50% market share threshold the Ninth Circuit has deemed presumptively insufficient to show market power. *See Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1438 (9th Cir. 1995). Apple does not have market power in the relevant market.

510. Even if Epic could show market power, it would *also* have to prove "some other ground for believing that the challenged behavior could harm competition in the market, such as the inherent anticompetitive nature of the defendant's behavior or the structure of the . . . market." *Tops Markets, Inc. v. Quality Markets, Inc.*, 142 F.3d 90, 97 (2d Cir. 1998). As discussed above, there is no evidence of anticompetitive effects here: Prices are *declining* and output is *increasing*. *See supra* § III.B.i.c (¶¶ 284–98). And Epic has not shown that "new rivals are barred from entering the market and . . . that existing competitors lack the capacity to expand their output." *Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1439 (9th Cir. 1995). On the contrary, new competitors like Nvidia's GeForce Now are constantly entering the game app transaction market, and there is nothing

preventing Apple's current competitors, including Microsoft and Sony, from adopting new business strategies to expand their market share.

511. Likewise, even under Epic's erroneous "iOS App Distribution" market, for the reasons already stated, *supra* § III.B.i.a (¶¶ 237–45), Apple lacks market power.

Apple's Conduct Has Many Procompetitive Business Justifications[36]

512. Even if Epic could carry its initial burden, Apple has carried its burden of showing "procompetitive rationale[s]" for its allegedly unlawful conduct. *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018); *In re Nat'l Collegiate Athletic Ass'n Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1256 (9th Cir. 2020) (if a plaintiff carries its initial burden, "the [defendant] must come forward with evidence of the restraint's procompetitive effects") (quotation marks omitted), *cert. granted NCAA v. Alston*, No. 20-512, 2020 WL 7366281 (Dec. 16, 2020). A procompetitive justification is "a nonpretextual claim that [the defendant's] conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal." *FTC v. Qualcomm Inc.*, 969 F.3d 974, 991 (9th Cir. 2020).

513. In cases involving two-sided transaction platforms, courts must consider procompetitive effects on both sides of the relevant market, *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2285–86 (2018), because effects that may appear anticompetitive on one side of a market may present no "net harm," and may even be procompetitive, when both sides of the market are considered, *United States v. Am. Express Co.*, 838 F.3d 179, 206 (2d Cir. 2016), *aff'd*, 138 S. Ct. 2274.

514. Although Apple bears the burden in this context to show procompetitive business rationales, *see Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018), Apple has met its burden by offering a multitude of procompetitive justifications for the design of iOS and the licensing terms of the DPLA, all of which are supported by substantial evidence, *see supra* § III.B.i.d (¶¶ 299–317). Epic's allegations of pretext fail for the reasons described above. *See supra* § III.B.i.e (¶¶ 318–27).

Epic Has Not Identified Adequate Less Restrictive Alternatives to Apple's Policies[37]

515. Once Apple has established procompetitive justifications for its policies and conduct, "the burden shifts back to [Epic] to demonstrate that the procompetitive efficiencies could be reasonably achieved through less anticompetitive means." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018); *see also O'Bannon v. Nat'l Collegiate Athletic Ass'n*, 802 F.3d 1049, 1074 (9th Cir. 2015) (if the defendant shows a procompetitive rationale for the restraint, the burden shifts back to the plaintiff to demonstrate "substantially less restrictive alternatives to the [challenged restraints]"). "[T]o be viable . . . an alternative must be

[36] Procompetitive justifications are addressed in § 5.2.3, pages 30–31 of the Joint Elements Submission.

[37] Less restrictive alternatives are addressed in § 5.2.4, page 32 of the Joint Elements Submission.

virtually as effective in serving the procompetitive purposes of the [challenged restraints], and without significantly increased cost." *O'Bannon*, 802 F.3d at 1074 (quotation marks omitted).

516. "[C]ourts are not 'free to micromanage organizational rules or to strike down largely beneficial market restraints.'" *In re Nat'l Collegiate Athletic Ass'n Athletic Grant-in-Aid Cap Antitrust Litig.*, 958 F.3d 1239, 1256 (9th Cir. 2020), *cert. granted NCAA v. Alston*, No. 20-512, 2020 WL 7366281 (Dec. 16, 2020). "[O]nly . . . where . . . a restraint is *patently and inexplicably* stricter than is necessary to accomplish all of its procompetitive objectives, an antitrust court can and should invalidate it and order it replaced with a less restrictive alternative." *O'Bannon v. Nat'l Collegiate Athletic Ass'n*, 802 F.3d 1049, 1075 (9th Cir. 2015) (emphasis in original).

517. "[A] theoretically less restrictive alternative that is not realistic given business realities" does not suffice; "only alternatives that are practical in the business situation faced by" the defendant should be considered. U.S. Dep't of Justice & Fed. Trade Comm'n, *Antitrust Guidelines for Collaborations Among Competitors* § 3.36(b) (2000); *see also M & H Tire Co. v. Hoosier Racing Tire Corp.*, 733 F.2d 973, 987 (1st Cir. 1984) (a plaintiff cannot rely on "possible less restrictive alternatives" that are "more hypothetical than practical").

518. The "alternative" that Epic proposes is simply the ultimate relief it seeks in this case: A redesign of iOS to permit distribution of iOS apps other than through the App Store. Epic's proffered alternative to Apple's App Store policies would not sufficiently advance the procompetitive purposes behind Apple's policies, and as such, must be rejected as a "less restrictive alternative."

519. Epic's alternative involves barring Apple from restricting in any way (whether technical, contractual, financial, or otherwise) the distribution of iOS apps through distribution channels other than the App Store. *See* Remedies App'x A at 3–5. This alternative is an inadequate replacement for iOS's current design for at least two reasons.

520. *First*, the design of iOS enables Apple to receive a commission for its licensing of its intellectual property, whereas Epic's alternative would encourage freeriding. One of the primary purposes of intellectual property law is to protect innovative assets, and accordingly, property holders enjoy the *exclusive right* to determine whether they want to license their technology to third-parties, and on what terms. This right is essential to prevent third-parties from free-riding on the results of expensive and risky research and development, encourage the creation of new goods and services, increase output, and improve product quality. FOF ¶ 601.

521. Apple has always protected its innovative technology and practices, expending considerable time and effort to obtain patents, trademarks, and copyrights, and to generate and protect trade secrets. FOF ¶¶ 89–89.4. Indeed, Apple has hundreds of patents and patent applications related to iOS and the App Store. *Id.* Although Apple is not *required* to do so, it has chosen to license some of this technology, under specific terms, to developers seeking to utilize that technology and develop apps for the App Store. Epic, as

a licensee, has used this valuable intellectual property in the development, promotion, and distribution of *Fortnite* on iOS.

522. The "walled garden" design of iOS is part of what allows Apple to recoup its investment in its intellectual property and collect a royalty for the licensing of its intellectual property. By allowing for distribution of apps only through the App Store, Apple can ensure that developers cannot freeride on Apple's innovation, because it is through the App Store that Apple charges its commission (on paid downloads and in-app digital transactions). FOF ¶ 596. Under Epic's model, however, developers could distribute iOS apps—and therefore benefit from Apple's intellectual property—without going through the App Store and therefore evading the mechanism for paying a fee for the licensing of Apple's intellectual property. Although Apple could still require that developers distributing iOS apps through other platforms pay a commission to Apple as a licensing fee, its ability to enforce and police that requirement would be severely limited.

523. Epic's contention that free-riding cannot be a problem in this context because macOS, which does not use a "walled garden" business model, does not have similar free-riding problems is incorrect. iOS and macOS—as well as the Mac App Store—employ fundamentally different business models and are designed in fundamentally different ways. FOF ¶¶ 68–70; *see also supra* § III.B.i.b (¶ 50). For one thing, the Mac App Store was designed against a backdrop of settled expectations about how software would be distributed for macOS, and it was therefore commercially challenging for Apple to protect its intellectual property to the same extent it has done through iOS. FOF ¶ 72. But that Apple has managed to cope with a more open ecosystem for one platform does not mean that it would not be harmed if it were forced to license all of its intellectual property across all platforms on the same terms.

524. *Second*, Epic's alternative would degrade security, privacy, and reliability. Allowing "sideloading"—that is, the distribution of apps directly onto a device without going through the App Store—would diminish security and reliability for users, who would no longer be guaranteed a safe and secure environment for downloading apps that actually work. FOF ¶¶ 73–73.2. This could also diminish consumer confidence in security, which could reduce consumer demand and thereby harm developers too. FOF ¶ 588. Consumers who use macOS understand and accept those risks in the context of a desktop computer, but may not want to accept those risks on a personal iOS device, which may contain sensitive and personal information. FOF ¶ 68.

525. Apple's business judgment that it should install more rigorous and restrictive protections for information stored on iOS devices than on macOS devices is protected by law. Apple has implemented on iOS certain security measures—including the "walled garden"—that go beyond what it implemented for macOS. The question, for purposes of evaluating a less restrictive alternative, is not whether Apple could adopt a different business model (here, opting for a less secure device in exchange for permitting alternative transaction platforms) and still be profitable. Instead, the question is whether Apple could achieve the same *procompetitive efficiencies* (here, consumer security and privacy) through less restrictive means. *See Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2284 (2018). The

evidence shows that the answer here is no: Even Epic's experts admit that Apple's curation of apps distributed through the App Store adds security.

526. The "stores within stores" model—that is, the distribution of apps through platforms other than the App Store—also would inhibit security. Such a model would directly interfere with Apple's app review process, which is designed to make sure that the best apps rise to the top. As Mr. Sweeney himself has recognized, apps distributed through alternative stores would not necessarily be reviewed by Apple, but instead might be reviewed by operators of third-party stores who lack the resources, expertise, or incentive to conduct the level of review and analysis of app submissions that Apple does. FOF ¶ 609

527. Crucially, Epic's proposed relief appears to prohibit Apple from setting minimum guidelines or otherwise screening or reviewing alternative transaction platforms offered for distribution through the App Store (and apps distributed through those transaction platforms), even if those platforms contained harmful and offensive content. *See* Dkt. 276-1, Appendix A at 5. Epic's relief thus seeks to prevent Apple from regulating or acting upon alternative transaction platforms in any way that would distinguish it. But one of Apple's competitive advantages is that its products are not just safe, but *safer* than its competitors' products, due in no small part to its high-quality app review process. FOF ¶ 607. The stores within stores model would, to a large extent, eliminate that advantage. FOF ¶ 610.

528. Epic's argument that offering alternative transaction platforms would help increase demand for the App Store and thereby create value for Apple is wrong because it entirely ignores that independent transaction platforms would have different incentives and capabilities relative to protecting consumer security and privacy than Apple. And consumers could attribute any negative results of low-quality apps received through alternative transaction platforms, such as malware or data leaks, to Apple, directly degrading the value of Apple's brand.

529. For these reasons, Epic's proposed alternative is woefully lacking and would not be "virtually as effective" at ensuring that Apple's procompetitive rationales for its policies are met. *O'Bannon v. Nat'l Collegiate Athletic Ass'n*, 802 F.3d 1049, 1074 (9th Cir. 2015) (quotation marks omitted). As a result, even if the Court reached step three of the rule of reason analysis, Epic would be unable to carry its burden, and its Section 1 claim would fail.

iv. Sherman Act Section 1 – Unreasonable Restraint of Trade in the "iOS In-App Payment Processing Market" (Epic Count 5)

530. In Count 5, Epic claims 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." Dkt. 1 ¶ 227.

531. This claim fails for substantially the same reasons that Count 3 fails.

532. *First*, as a threshold matter, Epic's "concerted action" argument for this Count is identical to its concerted-action argument for Count 3, and cannot succeed for the reasons articulated *supra* § III.C.ii.a (¶¶ 490–502). An agreement is a required element of a Section 1 claim, and without one, Count 5 falls. *See Aerotec Int'l, Inc. v. Honeywell Int'l, Inc.*, 836 F.3d 1171, 1178 (9th Cir. 2016).

533. *Second*, Epic could not prevail on Count 5 under the rule of reason analysis. For the rule of reason legal framework, *see supra* § III.C.ii.b (¶¶ 503–530).

534. At step one, for the reasons stated *supra* § III.B.ii.c (¶¶ 343–51), Epic has adduced no evidence showing that Apple's IAP functionality has had any anticompetitive effects. At step two, once again for the reasons stated *supra* § III.B.ii.d (¶¶ 352–73), Apple has proffered several procompetitive justifications for the terms of the DPLA relating to IAP: IAP allows Apple to collect its commission seamlessly and is the means through which Apple collects a royalty for the use of its intellectual property; IAP provides a safe and secure means for consumers to execute transactions; IAP allows Apple to offer consumers a convenient way to execute and track transactions; and IAP provides benefits to developers by assisting them with currency conversion, conducting credit-worthiness checks, and generally increasing the value of the App Store.

535. At step three, Epic has identified no adequate less restrictive alternative for Apple's use of IAP. The only alternative that Epic proposes is that Apple be barred from restricting or deterring in any way "the use of in-app payment processors other than IAP." Remedies App'x at 6. This proposed alternative is deficient.

536. *First*, IAP is the method through which Apple collects its licensing fee from developers for the use of its intellectual property. FOF ¶ 680. Although Apple could still charge a commission on developers even without IAP, it would be difficult for Apple to police and collect that commission. FOF ¶ 701. Developers could thus potentially avoid the commission while benefitting from Apple's innovation free of charge. As set forth above, *see supra* § III.B.ii.d (¶¶ 353–60), Apple is entitled to license its intellectual property for a fee, and to guard its intellectual property from uncompensated use by others. The requirement of usage of IAP accomplishes that aim, while Epic's proposed alternative would undermine it.

537. *Second*, if Apple could no longer require developers to use IAP for digital transactions, then iOS users would be forced to navigate a fragmented payment landscape, in which they might be required to use payment solutions that lack the safety and security of IAP with no good cause. FOF ¶ 703.

538. *Third*, forcing consumers to use different payment solutions for each app would reduce the quality of the user experience and force iOS users to input payment information into multiple apps for digital transactions, rather than simply managing a single account through IAP. FOF ¶ 707. Not only would such an arrangement harm consumers, but it also would harm developers by weakening the value of the App Store as a whole.

539. To the extent Epic takes the position that its relief would bar Apple from receiving *any commission at all* on in-app purchases made using iOS, *see, e.g.*, Remedies App'x 7, such a remedy is inconsistent with prevailing intellectual property law, Epic's alternative would thus be legally impermissible, and would not serve the procompetitive purposes of Apple's current policies and practices. *See O'Bannon v. Nat'l Collegiate Athletic Ass'n*, 802 F.3d 1049, 1074 (9th Cir. 2015).

540. For these reasons, Epic's Section 1 claim relating to IAP must be rejected.

D. Sherman Act Claims – Defenses

541. Regardless of whether Epic can otherwise prevail on its Sherman Act claims, Apple has set forth several defenses that preclude liability in whole or in part.

542. Apple has asserted 27 defenses. *See* Dkt. 66 at 36–41. Some of those defenses are addressed in detail below, whereas others relate to substantive elements of Epic's claims and therefore are addressed elsewhere. An overview of each defense is set forth below.

542.1 *Failure to State a Cause of Action*: The insufficiency of Epic's allegations is discussed with respect to each cause of action.

542.2 *Legitimate Business Justification*: With the exception of a *per se* tying claim (as to which legitimate business justification is an affirmative defense), anticompetitive effect is a substantive element of Epic's claims on which Epic bears the ultimate burden. Apple's procompetitive justifications for its conduct are addressed at § III.B.i.d (¶¶ 299–317), § III.B.ii.d (¶¶ 352–67).

542.3 *No Injury or Threatened Injury*: Injury or threatened injury is a substantive element of Epic's claims on which Epic bears the ultimate burden. The absence of injury or threatened injury to Epic is addressed at § III.A.iii (¶¶ 183–86).

542.4 *No Entitlement to Injunctive Relief*: Epic's entitlement to injunctive relief is a substantive element of Epic's prayer for relief on which Epic bears the ultimate burden. Specific equitable defenses (e.g., unclean hands) are addressed elsewhere. Epic's entitlement to injunctive relief is dependent upon its prevailing on liability, and is addressed specifically at § V.B. (¶¶ 637–734).

542.5 *Causation*: Causation is a substantive element of Epic's claims on which Epic bears the ultimate burden. Causation is addressed at § III.A.iii (¶¶ 183–86).

542.6 *Foreign Trade Antitrust Improvements Act (FTAIA)*: The FTAIA is a limitation on the scope of the Sherman Act, under which Epic bears the burden of showing an exception. The FTAIA is addressed at § III.A.iv (¶¶ 187–96).

542.7 *Doctrine of International Comity*: International comity is a limitation on the scope of the Sherman Act. International comity is addressed at § III.A.iv (¶¶ 197–200).

542.8 *Ratification, Agreement, Acquiescence, Consent*: Ratification, agreement, acquiescence, and consent are alternative formulations of waiver and estoppel, and are addressed at § III.D.ii (¶¶ 554–60), § IV.C.i (¶¶ 627–30).

542.9 *Statute of Limitations*: Statute of limitations is addressed at § III.D.iii (¶¶ 561–71), § IV.C.ii (¶ 631–33).

542.10 *Lack of Standing*: Standing is a threshold requirement of Epic's claims on which Epic bears the ultimate burden. Standing is addressed at § III.A.iii (¶¶ 183–86).

542.11 *Failure to Join Indispensable Party*: Failure to join an indispensable party is addressed below at § III.D.i (¶¶ 544–53).

542.12 *Due Process*: Epic's proposed injunction, if entered, would constitute a government-sanctioned invasion or taking of Apple's property rights without just compensation, in violation of the Due Process Clause and the Takings Clause. Due process is addressed at § V.B.iii.c (¶ 685).

542.13 *Indemnity*: Indemnity is a substantive claim for relief on which Apple bears the ultimate burden. Indemnity is addressed at § VI.D (¶¶ 768–77), § VII.D (¶¶ 840–44).

542.14 *Protected Rights – Noerr-Pennington*: The *Noerr-Pennington* doctrine is addressed below at § III.D.iv (¶¶ 578–82).

542.15 *Protected Rights – Intellectual Property & Other Statutes*: Apple's rights protected by federal and state intellectual property laws are relevant to Epic's claims and are discussed throughout. Federal patent and copyright laws are *in pari materia* with the antitrust laws and the latter may not be construed or applied in a way that diminishes or trenches upon the former. *See Simpson v. Union Oil Co. of Cal.*, 377 U.S. 13, 24 (1964). Intellectual property rights are discussed throughout, and are addressed specifically at § III.B.i.b (¶¶ 256–62, 274–83).

542.16 *Protected Rights – Contract*: Apple's rights protected by contract are discussed throughout, and are addressed specifically at § III.B.i.b (¶¶ 249–55).

542.17 *Laches*: Laches is addressed below at § III.D.iii. (¶¶ 561–77), § IV.C.ii (¶¶ 631–33).

542.18 *Waiver*: Waiver is addressed below at § III.D.ii (¶¶ 554–60), § IV.C.i (¶¶ 627–30).

542.19 *Estoppel*: Estoppel is addressed below at § III.D.ii (¶¶ 554–60), § IV.C.i (¶¶ 627–30).

542.20 *Unclean Hands*: The doctrine of unclean hands is addressed at § V.B.iii.e (¶¶ 693–700).

542.21 *Non-justiciability*: The inappropriateness of asking a federal court to dictate a specific business model for a competitor is addressed at § V.B.i (¶¶ 646–53), § V.B.iv (¶¶ 703–11).

542.22 *Not Unlawful, Unfair, or Fraudulent*: Unlawful, unfair, or fraudulent conduct is a substantive element of Epic's claims on which Epic bears the ultimate burden. Unlawful, unfair, or fraudulent conduct is addressed at § IV.B (¶¶ 601–26).

542.23 *Waiver of Damages*: Epic has affirmatively, unequivocally, and irrevocably waived any claim for damages. Separate discussion of this defense is not necessary at this time.[38]

542.24 *Election of Remedies*: Separate discussion of this defense is not necessary at this time, however, Epic's election to pursue only injunctive relief is relevant to the issues of irreparable harm and adequate remedies at law, which are addressed at §§ V.B.iii.a–V.B.iii.b (¶¶ 669–82).[39]

542.25 *Effective Opt-Out*: Epic has opted out from *Cameron v. Apple Inc.*, No. 19-3074 (N.D. Cal.), and therefore may not benefit from any judgment in that class action irrespective of the outcome of this suit. Separate discussion of this defense is not necessary at this time.[40]

542.26 *No Entitlement to Interest, Attorney's Fees, or Costs*: Epic's entitlement to interest, attorneys' fees, and costs is a substantive element of its claims on which Epic bears the ultimate burden. Separate discussion of this issue is not necessary at this time.[41]

ii. Failure to Join an Indispensable Party (All Epic Counts)[42]

543. Federal Rule of Civil Procedure 19 "establishes two broad categories of required parties." *Ward v. Apple Inc.*, 791 F.3d 1041, 1048 (9th Cir. 2015).

544. *First*, a party is "required" if, "in that person's absence, the court cannot accord complete relief among existing parties." *Ward v. Apple Inc.*, 791 F.3d 1041, 1048 (9th Cir. 2015) (quoting Fed. R. Civ. P. 19(a)(1)(A)). "[T]he equitable relief sought in an action may make

---

[38] Apple reserve the right to assert this defense if Epic attempts to alter its prayer for relief to include damages.

[39] Apple reserves the right to assert this defense if Epic attempts to alter its prayer for relief to include damages.

[40] Apple reserves the right to assert this defense if Epic attempts to benefit from any relief issued in *Cameron v. Apple Inc.*, No. 19-3074 (N.D. Cal.).

[41] Apple reserves the right to assert this issue if Epic prevails on its claims and seeks interest, attorneys' fees, and/or costs.

[42] Failure to join an indispensable party is addressed in § 17.1, page 122 of the Joint Elements Submission.

an absent party required." *Id.* at 1049. For instance, "all parties who may be affected by a suit to set aside a contract must be present." *Northrop Corp. v. McDonnell Douglas Corp.*, 705 F.2d 1030, 1044 (9th Cir. 1983).

545. *Second*, a "party is required if: that person claims an interest relating to the subject of the action and is so situated that disposing of the action in the person's absence may: (i) as a practical matter impair or impede the person's ability to protect the interest; or (ii) leave an existing party subject to a substantial risk of incurring double, multiple, or otherwise inconsistent obligations because of the interest." *Ward v. Apple Inc.*, 791 F.3d 1041, 1048 (9th Cir. 2015) (quoting Fed. R. Civ. P. 19(a)(1)(B)). The party asserting the absence of a necessary party bears the burden of persuasion. *Makah Indian Tribe v. Verity*, 910 F.2d 555, 558 (9th Cir. 1990).

546. Epic International is a necessary party to this litigation because Epic has sought (and preliminarily obtained) equitable relief inuring to the benefit of Epic International.

547. At the preliminary injunction stage, Epic sought relief restraining Apple "from taking any adverse action against Epic, including but not limited to restricting, suspending, or terminating any other Apple Developer Program account of Epic *or its affiliates*." Dkt. 61-36 at 3 (emphasis added). Epic sought that relief because Epic International, not Epic, is the signatory for the account associated with Unreal Engine. FOF ¶ 250. The Court granted that portion of the relief, and expressly included Epic International within the scope of that relief. *See* Dkt. 118 at 3, 38. Now, in its request for permanent relief, Epic requests "that the Court permanently enjoin Apple from taking any retaliatory actions against Epic *or any of its affiliates* in connection with or based on Epic's filing of this Action, the August 2020 enablement of a direct payment option in *Fortnite*, or the steps Epic took to enable that option." Dkt. 276-1, Appendix A at 7 (emphasis added).

548. Epic International could have, but did not, join Epic as a plaintiff in this action, and having elected not to do so, it cannot benefit from the relief that Epic requests. That is particularly true because the effect of the relief Epic seeks would be to set aside the DPLA (or at least those terms of the DPLA with which Epic disagrees) and preclude Apple from enforcing its rights under the contract. But "all parties who may be affected by a suit to set aside a contract must be present." *Northrop Corp. v. McDonnell Douglas Corp.*, 705 F.2d 1030, 1044 (9th Cir. 1983). Apple's contract with Epic International may not be set aside, in whole or in part, if Epic International is not a party to the case.

549. Importantly, Apple pleaded this affirmative defense in its Answer to the Complaint, Dkt. 66 at 38, and pointed out in the hearing on the temporary restraining order that Epic International "is an independent corporation" that "isn't represented here," and for which "no filings have been made." Hr'g Tr. 31:2–9 (Aug. 24, 2020). Yet Epic has never sought leave to amend its Complaint to add Epic International as a party, and in fact represented to the Court that it would *not* be amending its Complaint. *See* Hr'g Tr. 8:14 (Sept. 28, 2020). Epic may not now seek to belatedly amend its Complaint to cure a defect of which it has been aware for months.

550. Because Epic International is not a party to the case, the Court cannot award Epic International any relief with respect to its developer account or the Unreal Engine. Unreal Engine is not distributed, owed, or licensed by Epic—the actual plaintiff in this litigation—but rather is licensed by Epic International. While the two companies are related, "it is long settled as a matter of American corporate law that separately incorporated organizations are separate legal units with distinct legal rights and obligations." *Agency for Int'l Dev. v. Alliance for Open Soc'y Int'l, Inc.*, 140 S. Ct. 2082, 2087 (2020). The Court therefore may not enjoin Apple from terminating Epic International's developer account.

551. Awarding Epic International relief in a case in which it is not a plaintiff would also be inequitable. Epic International, as a non-party, would not be bound by any judgment in this case adverse to Epic. *See Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found.*, 402 U.S. 313, 329 (1971). Epic thus cannot rely on Epic International and its products and services to prove its own claims—if Epic International has claims, it must assert them in its own name.

552. Thus, to the extent Epic seeks to rely on Epic International's products or services, or its contractual relationship with Apple, or the purported harm to Epic International as a basis for injunctive relief, Epic International is an indispensable party, and pursuant to Rule 19, such contentions must be dismissed.

iii. Waiver and Estoppel (Epic Counts 1–6)[43]

553. Even if Epic could otherwise prevail on its Sherman Act claims, its claims are foreclosed by the defenses of waiver and estoppel.

554. "[W]aiver is the intentional relinquishment or abandonment of a known right." *Honcharov v. Barr*, 924 F.3d 1293, 1295 n.1 (9th Cir. 2019) (quotation marks omitted).

555. To establish an equitable estoppel defense, a plaintiff must prove that "(1) [the defendant] was aware of the true facts; (2) [the defendant] intended its representation to be acted on or acted such that the plaintiff[] had a right to believe it so intended; (3) the plaintiff[] was ignorant of the true facts; and (4) the plaintiff[] relied on [the defendant's] representation to [its] detriment." *Acri v. Int'l Ass'n of Machinists & Aerospace Workers*, 781 F.2d 1393, 1398 (9th Cir. 1986).

556. When contractual considerations are implicated, equitable estoppel "precludes a party from claiming the benefits of a contract while simultaneously attempting to avoid the burdens that contract imposes." *Comer v. Micor, Inc.*, 436 F.3d 1098, 1101 (9th Cir. 2006) (quotation marks omitted). Thus, a court may "refuse to exercise" its jurisdiction over equitable claims

[43] Waiver and estoppel are addressed in §§ 17.2–17.3, pages 123–24 of the Joint Elements Submission.

> [w]hen a party, with full knowledge, or at least with sufficient notice or means of his knowledge, of his rights, and of all the material facts, freely does what amounts to a recognition of the transaction as existing, or acts in a manner inconsistent with its repudiation, or lies by for a considerable time, and knowingly permits the other party to deal with the subject-matter under the belief that the transaction has been recognized, or freely abstains for a considerable length of time from impeaching it, so that the other party is thereby reasonably induced to suppose that it is recognized.

Simmons v. Burlington, C.R. & N.R. Co., 159 U.S. 278, 291 (1895) (quotation marks omitted); *see also United States v. Ga.-Pac. Co.*, 421 F.2d 92, 96 (9th Cir. 1970) (equitable estoppel "absolutely preclud[es]" claims "both at law and equity").

557. Before instituting this lawsuit, Epic had been operating pursuant to the terms of the DPLA for ten years. FOF ¶ 252. During that time, Epic reaped the benefits of its relationship with Apple—it developed its apps for compatibility with iOS using Apple's SDKs, distributed *Fortnite* to over 100 million iOS users through the App Store (to say nothing of the other games Epic distributed through the App Store to iOS users), and took in over $700 million in revenue from *Fortnite* alone through iOS. FOF ¶ 264. In all of that time—while it was building its brand on the back of Apple's customer base and proprietary intellectual property—it never contended that it was not required to abide by the terms of the DPLA because of any purported antitrust concerns. In fact, Epic renewed its DPLA with Apple on June 30, 2020—the very same day it sent a letter to Apple demanding a change in the longstanding terms of access. FOF ¶ 276. Less than two months later, Epic activated the "hotfix" and began bypassing IAP. FOF ¶¶ 298–300. Epic thus *knew* when it renewed its DPLA that it intended to breach it.

558. Epic's lawsuit amounts to no more than an effort to avoid the consequences of the contract that it agreed to and abided by, despite reaping the benefits of its relationship with Apple for years. This is a bare attempt to "claim[] the benefits of a contract while simultaneously attempting to avoid the burdens that contract imposes." *Comer v. Micor, Inc.*, 436 F.3d 1098, 1101 (9th Cir. 2006) (quotation marks omitted). Epic cannot claim that it did not previously have knowledge of the relevant facts giving rise to its antitrust claims, nor that its conduct prior to this dispute could be viewed as anything other than an acquiescence to the terms agreed to between it and Apple. The relevant contract provisions have not changed in the intervening years. FOF ¶ 396. And Apple relied on that acquiescence to permit Epic access to its intellectual property, and to help Epic reach more consumers and offer more content.

559. Thus, even if Epic could otherwise prevail on its Sherman Act claims, its request for relief is barred by the doctrines of waiver and estoppel.

iv. Limitations on Actions (Epic Counts 1–6)[44]

560. Epic's Sherman Act claims are also barred as untimely pursuant to the doctrine of laches.

[44] Limitations on actions are addressed in § 17.4, pages 125–26 of the Joint Elements Submission.

b. Four-Year Limitations Period

561. Although the statute of limitations on damages claim under Section 4 of the Clayton Act is four years, there is no statute of limitations for injunctive-relief claims under Section 16 of the Clayton Act. *See Oliver v. SD-3C LLC*, 751 F.3d 1081, 1085 (9th Cir. 2014). Such claims are, however, "subject to the equitable defense of laches." *Id.*

562. "Laches is an equitable defense that prevents a plaintiff, who with full knowledge of the facts, acquiesces in a transaction and sleeps upon his rights" from obtaining equitable relief. *Danjaq LLC v. Sony Corp.*, 263 F.3d 942, 950–51 (9th Cir. 2001) (quotation marks omitted). To compute the laches period for Sherman Act claims that pursue equitable relief under the Clayton Act, courts use Section 4B's four-year statute of limitations as a guideline. *See Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014).

563. A cause of action in antirust ordinarily "accrues each time a plaintiff is injured by an act of the defendant and the statute of limitations runs from the commission of the act." *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014) (alteration and quotation marks omitted).

564. Application of the presumptive four-year limitation renders Epic's Sherman Act claims untimely. Epic first entered into the DPLA in 2010. FOF ¶ 252. It has asserted no material change in the terms of that agreement or in Apple's business design since then that would give rise to an antitrust claim that it could not have asserted in 2010. Accordingly, if Epic had a viable claim now, it would have had the same claim when it first agreed to the DPLA and joined the App Store in 2010, and it would have had four years to bring suit on that claim. Instead of asserting a claim then, it waited (and profited from its relationship with Apple) until 2020 to file this suit, well outside the presumptive four-year limitations period for Section 16 claims.

c. Exceptions to the Four-Year Limitations Period

565. Although claims for injunctive relief under the Clayton Act generally cannot be brought more than four years after the challenged anticompetitive conduct, "there are recognized exceptions to this general rule." *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014).

566. *First*, "in the context of a continuing conspiracy to violate the antitrust laws, each time a plaintiff is injured by an act of the defendant[,] a cause of action accrues to him to recover the damages caused by that act." *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014) (alterations and quotation marks omitted). Under this exception, "[i]n order to restart the statute of limitations, there must be a new overt act that: (1) is new and independent and not merely a reaffirmation of a previous act, and (2) inflicts new and accumulating injury on the plaintiff." *Id.* (alterations and quotation marks omitted). This "continuing violation" exception means that "each time a defendant sells its price-fixed product, the sale constitutes a new overt act causing injury to the purchaser and the statute of limitations runs from the date of the act." *Id.* "However, the mere fact that [a party] receive[s] a benefit today as a result of [previous alleged anticompetitive conduct] is not enough to

restart the statute of limitations." *Aurora Enters., Inc. v. Nat'l Broad. Co.*, 688 F.2d 689, 694 (9th Cir. 1982).

567. *Second*, "the limitations period may start to run after the defendant's initial violation of the antitrust law, if it is 'uncertain' or 'speculative' whether the defendants' antitrust violation has injured the plaintiff at the time of the violation." *Oliver v. SD-3C LLC*, 751 F.3d 1081, 1086 (9th Cir. 2014) (quotation marks omitted).

568. The continuing violation doctrine does not apply here. There have been no new "overt acts" since 2010 giving rise to an antitrust claim—Apple's policies and procedures regarding the App Store have remained unchanged in relevant part during that entire time period. In fact, Apple has introduced numerous *reductions* to what had been a flat 30% commission rate, dispelling any notion of additional anticompetitive conduct in the intervening years. FOF ¶¶ 159–176.

569. The fact that Apple continues to curate iOS apps and continues to collect its commission through IAP is not sufficient to invoke the continuing violation doctrine. The continuing violation doctrine does not apply simply because allegedly anticompetitive conduct predating the limitations period continues into the limitations period—there must be a new "overt act" within the limitations period. *See In re Animation Workers Antitrust Litig.*, 87 F. Supp. 3d 1195, 1212–13 (N.D. Cal. 2015) (holding insufficient the allegation that an agreement not to poach competitors' employees depressed employees' salaries into the limitations period); *Ryan v. Microsoft Corp.*, No. 14-CV-4634, 2015 WL 1738352, at *13–14 (N.D. Cal. Apr. 10, 2015) (same). Likewise, "the passive receipt of profits from an illegal contract by an antitrust defendant is not an overt act of enforcement which will restart the statute of limitations." *Eichman v. Fotomat Corp.*, 880 F.2d 149, 160 (9th Cir. 1989). The contractual and technical restrictions of which Epic complains were put in place long ago and have never been materially altered. Epic's allegation that those same restrictions remain in place today is not enough to establish a new "overt act" within the limitations period.

570. Nor can Epic qualify under the exception for uncertain injury. To the extent Epic can be said to have suffered injury at all, any injury today is the same as it would have been in 2010, namely, that Epic purportedly cannot open up its own competing app stores for iOS apps or use its own payment processing service. The continuing violation doctrine does not apply.

d. Equitable Bar

571. In addition to provide a presumptive four-year period in which to bring Section 16 claims, the equitable doctrine of laches also operates to bar an otherwise timely suit in certain circumstances. As relevant here, laches "prevents a plaintiff, who with full knowledge of the facts, acquiesces in a transaction and sleeps upon his rights" from obtaining equitable relief. *Danjaq LLC v. Sony Corp.*, 263 F.3d 942, 950–51 (9th Cir. 2001) (quotation marks omitted).

572. In the antitrust context, the doctrine of laches is necessary, because without it, "a plaintiff under [Section] 16 could seriously interfere with a rival's business operations, at a time of the plaintiff's own choosing, yet the public would enjoy none of the safeguards of the public-interest standards and expertness which presumably guide the government when it is a plaintiff." *Int'l Tel. & Tel. Corp. v. Gen. Tel. & Elec. Corp.*, 518 F.2d 913, 926–27 (9th Cir. 1975), *disapproved of on other grounds by California v. American Stores Co.*, 495 U.S. 271 (1990). The Ninth Circuit has thus indicated that Congress did not "intend[], in passing [Section] 16 of the Clayton Act, to permit potential plaintiffs to sleep through their competitors' antitrust violations and then sue many years later." *Id.* at 927. "The potential for economic disruption is so great that when placed in private hands it should be circumscribed by the requirement that injunction-seeking plaintiffs act with reasonable promptness unless excused by equitable considerations." *Id.*

573. This formulation of the doctrine of laches fits the circumstances here to a T. Epic has benefitted from its relationship with Apple for over ten years. Epic does not claim that the facts giving rise to its Sherman Act claims have materially changed in the preceding years, or that it could not have brought this suit before it did. Instead, it "sle[pt] on its rights," building its brand through Apple's intellectual property and inducing Apple to give it access to iOS and the millions of consumers who use it. Yet now, with its flagship game dying out (FOF ¶¶ 268–69), Epic must find a new way to compete. It initiated its "Project Liberty" campaign as a means of reducing the price for which it must pay for the use of Apple's intellectual property, and initiated this litigation under the pretense that it simply wants to aid competition, not to boost its own profit margins.

574. Equity disfavors such a strategy and will not reward opportunistic plaintiffs who fail to timely assert their rights, asserting paradigm-altering claims like those raised here only when it suits them. The "potential for economic disruption" here, were Epic permitted to obtain the injunctive relief it seeks, is substantial. *Int'l Tel. & Tel. Corp. v. Gen. Tel. & Elec. Corp.*, 518 F.2d 913, 927 (9th Cir. 1975), *disapproved of on other grounds by California v. American Stores Co.*, 495 U.S. 271 (1990). And it is made all the more substantial by the fact that Epic induced Apple to continue to make significant investments in the App Store (and, consequently, Epic's iOS-compatible products) for the past ten years.

575. Indeed, Epic's lawsuit does not appear to be motivated by the "discovery" of a heretofore unknowable "injury," but rather by a commercial desire to boost its revenue in the face of falling profits. FOF ¶¶ 268–69. Rather than simply bring an antitrust lawsuit, Epic first embarked on a calculated campaign to market itself as the people's hero. FOF ¶¶ 280–87. Through "Project Liberty," Epic implemented a surreptitious "hotfix" to bypass IAP and avoid the 30% commission rate that it had contractually agreed to in the DPLA. FOF ¶¶ 268–300. Epic's lawsuit was not spurred by a recognition of purported "injury," but rather is part of its public relations campaign.

576. Thus, even if Epic's claims could be saved by the continuing violation doctrine, Epic failed to promptly assert its rights, and cannot now obtain the sweeping equitable relief it seeks.

v. *Noerr-Pennington* Doctrine (All Epic Counts)

577. To the extent Epic's claims are premised on Apple's assertion of its contractual rights in this lawsuit, that aspect of Epic's claims is foreclosed by the *Noerr-Pennington* doctrine.

578. The *Noerr-Pennington* doctrine arises from the First Amendment right to "petition the Government for a redress of grievances," U.S. Const. amend. I, and insulates from antitrust scrutiny undertaken in furtherance of that constitutional right, *see United Mine Workers v. Pennington*, 381 U.S. 657, 669–70 (1965); *E. R.R. Presidents Conference v. Noerr Motor Freight, Inc.*, 365 U.S. 127, 137–38 (1961). "The doctrine extends to all three branches of government, and thus also exempts bringing a lawsuit—that is, petitioning a court—from antitrust liability." *Freeman v. Lasky, Hass & Cohler*, 410 F.3d 1180, 1183 (9th Cir. 2005).

579. Apple has sought in this lawsuit a declaration that the Developer Agreement and the DPLA are enforceable, and that "Apple has the contractual right to terminate its Developer Agreement with any or all of Epic's wholly owned subsidiaries, affiliates, and/or other entities under Epic's control, including Epic International . . . , at any time and at Apple's sole discretion." Dkt. 66 at 63 ¶ 88.

580. Meanwhile, Epic has sought an "anti-retaliation" provision in its proposed injunctive relief that would "permanently enjoin Apple from taking any retaliatory actions against Epic or any of its affiliates in connection with . . . the August 2020 enablement of a direct payment option in *Fortnite*, or the steps Epic took to enable that option." Dkt. 276-1, Appendix A at 7.

581. To the extent Epic's request for an "anti-retaliation" provision is based in whole or in part on Apple's decision to enforce its rights under the Developer Agreement and the DPLA through the declaratory relief it seeks in this suit, such relief is barred by the *Noerr-Pennington* doctrine.[45]

IV. Epic's State-Law Claims

A. Cartwright Act (Epic Counts 7–9)[46]

582. Epic brings three claims under California's Cartwright Act based on the same factual allegations as the three Sherman Act Section 1 claims.

- Count 7 ("Unreasonable Restraints of Trade in the iOS App Distribution Market" – Cartwright Act) corresponds to Count 3 ("Unreasonable Restraints of Trade in the iOS App Distribution Market" – Sherman Act § 1);

- Count 8 ("Unreasonable Restraints of Trade in the iOS In-App Payment Processing Market" – Cartwright Act) corresponds to Count 5 ("Unreasonable

[45] Apple reserves the right to further brief this defense depending on the arguments presented by Epic in its Proposed Conclusions of Law and at trial.

[46] The Cartwright Act is addressed in § 10, pages 84–87 of the Joint Elements Submission.

Restraints of Trade in the iOS In-App Payment Processing Market" – Sherman Act § 1); and

- Count 9 ("Tying in the App Store in the iOS App Distribution Market to In-App Purchase in the iOS In-App Payment Processing Market" – Cartwright Act) corresponds to Count 6 ("Tying in the App Store in the iOS App Distribution Market to In-App Purchase in the iOS In-App Payment Processing Market" – Sherman Act § 1).

583. The Cartwright Act makes "unlawful, against public policy and void" "every trust," 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, 16726.

584. Although "[i]nterpretations of federal antitrust law are at most instructive, not conclusive, when construing the Cartwright Act," *Aryeh v. Canon Business Sols., Inc.*, 55 Cal. 4th 1185, 1195 (2013), where a plaintiff does not raise specific distinctions between the Cartwright Act and the Sherman Act, courts analyze federal and state claims together pursuant to federal antitrust law, *see, e.g.*, *name.space, Inc. v. Internet Corp. for Assigned Names & Numbers*, 795 F.3d 1124, 1131 n.5 (9th Cir. 2015) (post-*Aryeh* decision concluding that "the analysis under the Cartwright Act . . . is identical to that under the Sherman Act"); *Jones v. Micron Tech. Inc.*, 400 F. Supp. 3d 897, 922 (N.D. Cal. 2019) (treating Cartwright Act claims as coextensive with the Sherman Act where the parties identified no material differences); *Samsung Elec. Co., Ltd. v. Panasonic Corp.*, No. 10-CV-308, 2015 WL 10890655, at *8 (N.D. Cal. Sept. 30, 2015) (same).

585. Epic has not identified any differences between the Cartwright Act and the Sherman Act that would allow it to prevail on its Cartwright Act claims even if its Sherman Act claims fail. It points to language in California cases stating that "[t]he Cartwright Act is broader in range and deeper in reach than the Sherman Act," *In re Cipro Cases I & II*, 61 Cal. 4th 116, 161 (2015) (quotation marks omitted), but does not explain what specific differences there are that would bear on this case. For instance, *Cianci v. Superior Court*, 40 Cal. 3d 903 (1985), on which Epic relies, addressed the question whether the Cartwright Act applies to the medical profession. *Id.* at 916. It did not expand the Cartwright Act in a way that would affect the claim asserted here.

586. Accordingly, if Epic's Sherman Act claims fall (as they must), then Epic's Cartwright Act claims likewise fail.

ii. Epic's Cartwright Act Claims Fail for Lack of Concerted Action

587. Even to the extent the Cartwright Act may differ in some ways from the Sherman Act, Epic's claims under the Cartwright Act fail for lack of concerted action. Although Epic's Section 1 Sherman Act claims also fail for lack of concerted action, California law imposes a higher bar for concerted action that Epic cannot overcome even if it otherwise prevails on its Section 1 Sherman Act claims.

588. Epic's Cartwright Act claims fail because they challenge only unilateral conduct. The Cartwright Act applies only to an unlawful "combination of capital, skill or acts by two more persons." Cal. Bus. & Prof. Code § 16720. The court in *In re Qualcomm Antitrust Litigation* recognized that "the [Cartwright] Act does not cover 'wrongful conduct on the part of a single entity.'" 292 F. Supp. 3d 948, 974 (N.D. Cal. 2017) (citation omitted).

589. Here, all of Epic's Cartwright Act claims must fail because the Cartwright Act does not impose liability for "wrongful conduct on the part of a single entity." *Bondi v. Jewels by Edwar, Ltd.*, 267 Cal. App. 2d 672, 678 (1968). The Cartwright Act, by its express terms, requires a "combination." Cal. Bus. & Prof. Code § 16720.

590. Epic challenges only unilateral conduct by Apple, namely the design and policies related to the App Store, iOS, and IAP. That is not enough to make out a Cartwright Act. *See In re Apple iPod iTunes Anti-Trust Litig.*, No. 05-CV-00037, 2010 WL 2629907, at *5 (N.D. Cal. 2010) (holding "a claim that fails to allege any combination is not cognizable under the Cartwright Act").

591. Epic is incorrect in asserting that the "combination" element of a Cartwright Act claim can be shown "where a supplier or producer, by coercive conduct, imposes restraints to which distributors involuntarily adhere," quoting *In re Qualcomm Antitrust Litigation*, 292 F. Supp. 3d 948, 974 (N.D. Cal. 2017) (citation omitted). The "coercive conduct" mentioned in that case refers to concerted action cognizable only under Section 1 of the Sherman Act—a statute which itself requires an agreement between parties. *See id.* (quoting *Kolling v. Dow Jones & Co.*, 137 Cal. App. 3d 709, 720 (1982)). And in *Kolling*, the court made clear that "[i]f a seller does no more than announce a policy designed to restrain trade, and declines to sell to those who fail to adhere to the policy, no illegal combination is established," and that an illegal combination is formed only when "a supplier secures compliance with announced policies in restraint of trade by means which go beyond mere announcement of policy and the refusal to deal." 137 Cal. App. 3d at 721. A plaintiff must therefore show that the retailer "was coerced into adhering to [the supplier's] policy or that [it] acquiesced in it." *Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986), *opinion modified on denial of reh'g*, 810 F.2d 1517 (9th Cir. 1987); *see Hanson v. Shell Oil Co.,* 541 F.2d 1352, 1357, n.4 (9th Cir. 1976) ("No violation is made out unless plaintiff can show that the supplier's conduct rose to the level of coercion sufficient to deprive the dealers of their free choice."). There is no such evidence or allegations here.

592. For the same reason, Epic cannot rely on a monopoly maintenance theory of liability in its Cartwright Act claims. There is no analog in the statute to the Sherman Act's prohibition on unilateral monopolistic conduct; the Cartwright Act "does not have any parallel to Sherman Act section 2's anti-monopoly provisions." *Freeman v. San Diego Ass'n of Realtors*, 77 Cal. App. 4th 171, 200 n.32 (1999); *see also Dimidowich v. Bell & Howell*, 803 F.2d 1473, 1478 (9th Cir. 1986) ("This [monopoly] claim is not cognizable under the Cartwright Act, for it fails to allege any combination."), *opinion modified on denial of reh'g*, 810 F.2d 1517 (9th Cir. 1987).

593. The Cartwright Act does not target unilateral conduct in maintenance of a monopoly, and in the absence of concerted action, Epic cannot prevail on its Cartwright Act claims under any theory of liability.

iii. Epic's Cartwright Act Tying Claim Must Be Analyzed Under Section 16720 (Epic Count 9)

594. Epic's claim under the Cartwright Act for unlawful tying fails for all of the reasons its Sherman Act Section 1 tying claim fails. *See supra* § III.C.i (¶¶ 423–86).

595. A tying claim under the Cartwright Act may be asserted under Section 16720 of the Cartwright Act. If a plaintiff pursues a *per se* tying claim under Section 16720, the plaintiff must show: (1) "a tying agreement, arrangement or condition existed whereby the sale of the tying product was linked to the sale of the tied product or service"; (2) "the party had sufficient economic power in the tying market to coerce the purchase of the tied product"; (3) "a substantial amount of sale was affected in the tied product"; and (4) "the complaining party sustained pecuniary loss as a consequence of the unlawful act." *Morrison v. Viacom, Inc.*, 66 Cal. App. 4th 534, 541–42 (1998). These elements generally track that of a tying claim under Section 1 of the Sherman Act, *see supra* § III.C.i.a (¶¶ 426–30), and thus if Epic's Sherman Act tying claim fails (as it does), so too does its tying claim under Section 16720 of the Cartwright Act.

596. Alternatively, a plaintiff may pursue a tying claim under Section 16727 of the Cartwright Act, which provides that "[i]t shall be unlawful for any person to lease or make a sale or contract for the sale of goods, merchandise, machinery, supplies, commodities for use within the State . . . on the condition, agreement or understanding that the lessee or purchaser thereof shall not use or deal in the goods, merchandise, machinery, supplies, commodities, or services of a competitor or competitors of the lessor or seller." Cal. Bus. & Prof. Code § 16727. If a plaintiff pursues a *per se* tying claim under Section 16727, it may prevail if it shows *either* element (2) *or* (3) of a Section 16720 tying claim, along with elements (1) and (4).

597. Section 16727 of the Cartwright Act does not apply when the tying product is a service, as opposed to a good. On its face, the statute includes "services" among the possible tied products, but excludes "services" when setting forth the possible tying product. *See* Cal. Bus. & Prof. Code § 16727. Courts have accordingly rejected tying claims under Section 16727 where the alleged tying product is an intangible right or service instead of a tangible good. *See, e.g.*, *Morrison v. Viacom, Inc.*, 66 Cal. App. 4th 534, 548 (1998) (dismissing tying claim under Section 16727 because the statute "does not apply when the tying product is a service"); *Feitelson v. Google Inc.*, 80 F. Supp. 3d 1019, 1032–34 (N.D. Cal. 2015) (concluding that alleged tying product must be a tangible good); *Tele Atlas N.V. v. Navteq Corp.*, 397 F. Supp. 2d 1184, 1192 (N.D. Cal. 2005) (similar).

598. Epic cannot take advantage of the standard for liability set forth in Section 16727 of the Cartwright Act regarding unlawful tying, because the alleged tying product here—"iOS app distribution"—is not a tangible good. Epic therefore can only prevail, if at all, under the Section 16720 standard for a *per se* tying claim.

599. Because, as set forth above, Epic's tying claim under Section 1 of the Sherman Act fails, *see supra* § III.C.i (¶¶ 423–86), and its tying claim under the analogous Section 16720 framework must also fail.

B. California Unfair Competition Law (Epic Count 10)[47]

600. Epic brings a claim under the California Unfair Competition Law ("UCL"), claiming that it "was unreasonably prevented from freely distributing mobile apps or its in-app payment processing tool." Dkt. 1 ¶ 290. Epic claims that Apple's conduct is both "unlawful" and "unfair" under the Unfair Competition Law. *Id.* ¶¶ 288, 289.

601. The 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. Claims under the UCL are available to both business competitor and consumer plaintiffs. *Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 186–87 & n.12 (1999).

602. 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. Super. Ct.*, 51 Cal. 4th 310, 322 (2011) (emphases in original); *see also* Cal. Bus. & Prof. Code § 17204. The injury-in-fact requirement "incorporate[s] the established federal meaning" for "federal standing under article III." *Kwikset Corp.*, 51 Cal. 4th at 322, 324. A plaintiff therefore must show it (1) suffered an actual, or will suffer an imminent, concrete and particularized injury; (2) that this injury is fairly traceable to the defendant; and (3) that the injury is redressable. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–561 (1992).

603. The UCL's money-or-property requirement demands "some form of economic injury." *Kwikset Corp. v. Super. Ct.*, 51 Cal. 4th 310, 323 (2011). This "requirement is more difficult to satisfy than that of injury in fact." *Id.* at 325. The California Supreme Court has identified at least four ways through "which economic injury from unfair competition may be shown." *Id.* at 323. "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.*

604. The statutory phrase "as a result of," Cal. Bus. & Prof. Code § 17204, is given "its plain and ordinary" meaning, "requir[ing] a showing of a causal connection." *Kwikset Corp. v. Super. Ct.*, 51 Cal. 4th 310, 326 (2011). To satisfy this requirement, the alleged injury must derive from the defendant's conduct, not the plaintiff's own decision. *Hall v. Time Inc.*, 158 Cal. App. 4th 847, 857 (2008).

[47] The elements of the California Unfair Competition Law are addressed in § 11, page 88 of the Joint Elements Submission.

ii. Apple's Conduct Is Not Unlawful[48]

605. Epic cannot proceed under the unlawful prong of the UCL because the same conduct is alleged to support Epic's federal antitrust claims *and* its UCL claim, and Epic's federal antitrust claims fail.

606. Under the unlawful prong, the UCL "permits violations of other laws to be treated as unfair competition that is independently actionable." *AngioScore, Inc. v. TriReme Med., LLC*, 70 F. Supp. 3d 951, 961 (N.D. Cal. 2014); *see also Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 180 (1999) ("By proscribing 'any unlawful' business practice, section 17200 borrows violations of other laws and treats them as unlawful practices."). The law covers any conduct that "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 (2003). "Virtually any law—federal, state or local—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 (2010).

607. The parties agree that under the unlawful prong, Epic's UCL claim rises and falls with its Sherman Act and Cartwright Act claims. *See, e.g.*, *Cascades Computer Innovation LLC v. RPX Corp.*, No. 12-CV-01143 YGR, 2013 WL 316023, at *15 (N.D. Cal. 2013); *Datel Holdings Ltd. v. Microsoft Corp.,* 712 F. Supp. 2d 974, 999 (N.D. Cal. 2010).

608. Because Apple's conduct does not violate either the Sherman Act or the Cartwright Act, Epic's claim under the UCL's unlawful prong fails.

iii. Apple's Conduct Is Not Unfair[49]

609. Epic's UCL claim also fails under the unfairness prong. Again, because Epic challenges the same conduct in its federal antitrust claims and UCL claim, the Court's conclusion that Apple's conduct is not an antitrust violation also precludes a finding of unfair competition.

610. California courts "do not hold that in all circumstances an 'unfair' business act or practice must violate an antitrust law to be actionable under the unfair competition law," but "conduct alleged to be 'unfair' because it unreasonably restrains competition and harms consumers . . . is not 'unfair' if the conduct is deemed reasonable and condoned under the antitrust laws." *Chavez v. Whirlpool Corp.*, 93 Cal. App. 4th 363, 375 (2001). If "the same conduct is alleged to support both a plaintiff's federal antitrust claims and state-law unfair competition claim, a finding that the conduct is not an antitrust violation precludes a finding of unfair competition." *LiveUniverse, Inc. v. MySpace, Inc.*, 304 F. App'x 554, 557 (9th Cir. 2008); *see also Chavez*, 93 Cal. App. 4th at 375 ("To permit a separate inquiry into essentially the same question under the unfair competition law would only invite conflict and uncertainty and could lead to the enjoining of procompetitive conduct."); *Distance*

[48] The unlawful prong of the UCL is addressed in § 11.2, page 90 of the Joint Elements Submission.

[49] The unfair prong of the UCL is addressed in §§ 11.3–11.3.2, pages 91–97 of the Joint Elements Submission.

Learning Co. v. Maynard, No. 19-CV-03801, 2020 WL 2995529, at *10 (N.D. Cal. June 4, 2020) (collecting cases).

611. While "a practice may be deemed unfair even if not specifically proscribed by some other law," *Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 187 (1999), that is not the case where, as here, the same conduct giving rise to the UCL claim also is the basis for a claim under the antitrust laws, *see LiveUniverse, Inc. v. MySpace, Inc.*, 304 F. App'x 554, 557 (9th Cir. 2008); *U.S. Colo, LLC v. CoreSite One Wilshire, LLC*, NO. 14-CV-4044, 2014 WL 12689269, at *4 (C.D. Cal. July 31, 2014); *DocMagic, Inc. v. Ellie Mae, Inc.*, 745 F. Supp. 2d 1119, 1146–47 (N.D. Cal. 2010); *cf. Cent. Valley Med. Grp., Inc. v. Indep. Physician Assocs. Med. Grp., Inc.*, No. 19-CV-404, 2019 WL 3337891, at *4 (E.D. Cal. July 25, 2019) (distinguishing prior cases on the ground that in each, "the plaintiff either brought explicit antitrust claims or unfair competition claims based on underlying conduct that was *per se* lawful under the statute at issue").

612. Because the same conduct is alleged to support both Epic's federal antitrust claims *and* its state-law unfair competition claim, and Epic's federal antitrust claims fail, Epic's UCL claim based on "unfairness" must be rejected as well.

613. To the extent Epic's UCL claim does not rise and fall with its antitrust claims, its UCL claim must be analyzed under the applicable test based on whether the plaintiff is a business competitor or a consumer plaintiff. *Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 186–87 & n.12 (Cal. 1999).

614. The business competition standard, not the consumer standard, is applicable to Epic's claim. Where, as here, "the crux of [the plaintiff's] complaint is that [the defendant's] conduct unfairly injures their economic interests," the business competition standard applies. *Levitt v. Yelp! Inc.*, 765 F.3d 1123, 1136 (9th Cir. 2014); *Watson Labs., Inc. v. Rhone-Poulenc Rorer, Inc.*, 178 F. Supp. 2d 1099, 1117–18 (C.D. Cal. 2001) (viewing contractually obligated supplier and plaintiff as "ostensible competitor[s]"); *accord Advanced Thermal Scis. Corp. v. Applied Materials Inc.,* No. 07–CV-01384, 2009 WL 10671186, at *2 (C.D. Cal. Oct. 2, 2009) (applying business competition standard where plaintiff's claim was that the defendant had "usurped its business opportunit[ies]," notwithstanding argument that plaintiff was a "consumer" of defendant's products).

615. Epic alleges that Apple's conduct has injured its economic interests. Its antitrust claims are premised principally on the assertion that but for the technical restrictions in iOS and the contractual restrictions of the DPLA, it could sell iOS apps through EGS in competition with the App Store. *See* Dkt. 1 ¶¶ 89–92. That is a quintessential business competition claim—Epic believes the terms of competition with Apple are unfair, and seeks to change them through this litigation.

616. Under the business competitor standard for the unfairness prong of the UCL, a plaintiff must show that the alleged 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." *Cel-Tech Commc'ns, Inc. v. L.A. Cellular Tel. Co.*, 20 Cal. 4th 163, 187

(1999). The plaintiff must show that "any finding of unfairness to competitors under [the UCL] [is] tethered to some legislatively declared policy or proof of some actual or threatened impact on competition." *Id.* at 186–87.

617. The business competition standard requires the plaintiff's claim "to be tethered to the antitrust laws." *Nationwide Biweekly Admin., Inc. v. Super. Ct. of Alameda Cnty.*, 9 Cal. 5th 279, 304 n.10 (2020). "To determine whether something is sufficiently 'tethered' to a legislative policy for the purposes of the unfair prong, California courts require a close nexus between the challenged act and the legislative policy." *Hodsdon v. Mars, Inc.*, 891 F.3d 857, 866 (9th Cir. 2018).

618. A UCL claim that overlaps with deficient Sherman or Cartwright Act claims fails as a matter of law. *See, e.g.*, *PNY Techs., Inc. v. SanDisk Corp.*, No. 11-CV-04689 YGR, 2012 WL 1380271, at *15 (N.D. Cal. Apr. 20, 2012) (dismissing claim under "the UCL's unfair-prong" because the plaintiff had "not adequately pled its federal antitrust claims" and "its UCL claims [were] not materially different than its federal antitrust claims"); *Hicks v. PGA Tour, Inc.*, 165 F. Supp. 3d 898, 911 (N.D. Cal. Feb. 9, 2016) ("[W]here the same conduct alleged to be unfair under the UCL is also alleged to be a violation of another law, the UCL claim rises or falls with the other claims."), *aff'd in relevant part, vacated in part on other grounds*, 897 F.3d 1109 (9th Cir. 2018); *Eastman v. Quest Diagnostics Inc.*, 724 F. App'x 556, 559 n.2 (9th Cir. 2018) (similar).

619. Here, Epic's UCL claim challenges the same conduct as its antitrust claims: namely the design and policies surrounding iOS, the App Store, and IAP. Epic does not allege otherwise. Thus, under the business competition standard, because Epic's antitrust claims fail, its UCL claim must also be rejected. *See PNY Techs., Inc. v. SanDisk Corp.*, No. 11-CV-04689 YGR, 2012 WL 1380271, at *15 (N.D. Cal. Apr. 20, 2012).

620. Epic cannot proceed under the so-called "balancing test" applied by some courts prior to *Cel-Tech Communications, Inc. v. L.A. Cellular Telephone Co.*, 20 Cal. 4th 163, 187 (1999). Prior to *Cel-Tech*, and in some cases postdating *Cel-Tech*, courts have required a consumer plaintiff alleging unfair conduct by a business defendant to show that (1) the defendant's conduct "is immoral, unethical, oppressive, unscrupulous or substantially injurious to consumers," and (2) "the utility of the defendant's conduct" is outweighed by "the gravity of the harm to the alleged victim." *Drum v. San Fernando Valley Bar Ass'n*, 182 Cal. App. 4th 247, 257 (2010).

621. This "balancing test" is no longer good law after *Cel-Tech Communications, Inc. v. L.A. Cellular Telephone Co.*, 20 Cal. 4th 163, 187 (1999). In *Cel-Tech*, the California Supreme Court criticized this approach as "amorphous" and "provid[ing] too little guidance to courts and businesses." *Id.* at 185. "Vague references to 'public policy,'" the court explained, "provide too little guidance to courts and businesses," and "fail[] to give businesses adequate guidelines as to what conduct may be challenged and thus enjoined." *Id.* Such a standard could "sanction arbitrary or unpredictable decisions about what is fair or unfair," and "[i]n some cases, it may even lead to the enjoining of *pro*competitive conduct and thereby undermine consumer protection, the primary purpose of the antitrust laws." *Id.*

622. In light of the California Supreme Court's rejection of the "amorphous" balancing test, that test cannot be used to establish liability here. There is no precedent from the California Supreme Court suggesting that any plaintiffs—consumers or competitors—can continue to rely on the balancing test to establish liability.

623. In any event, Epic cannot take advantage of this "balancing test" because it does not pursue its claims here as a "consumer." Although Epic alleges that it has been harmed by Apple's conduct as a "consumer" of the App Store (by "consumer" in this sense, Epic presumably means as a developer) in that it is required to use Apple's IAP to conduct digital transactions, that does make the business competitor standard under *Cel-Tech* inapplicable. The Ninth Circuit has explained that even if a suit does not "involve[e] 'unfairness to the *defendant*'s competitors,'" if the "crux of the business owners' complaint is that [the defendant's] conduct unfairly injures their economic interests to the benefit of other business," the business competitor standard applies. *Levitt v. Yelp! Inc.*, 765 F.3d 1123, 1136 (9th Cir. 2014).

624. Here, the "crux" of Epic's complaint is that Apple's conduct has unfairly injured its economic interest in that it may not distribute iOS apps through EGS or use Epic direct payment to process transactions on its apps. *See* Dkt. 1 ¶¶ 87–102, 139–55, 287. Epic currently competes with Apple in that it offers a rival app store through which consumers may obtain Epic games, including *Fortnite*, and it seeks to alter the design of iOS and the terms of the DPLA so that it, Epic claims, can compete more effectively. Epic plainly does not bring claims as a "consumer" in this case.

625. Thus, Epic's UCL claim necessarily falls with its Sherman Act and Cartwright Act claims.

C. State-Law Claims – Affirmative Defenses

i. Waiver and Estoppel (Epic Counts 7–10)[50]

626. Epic's state-law claims are likewise precluded by the doctrines of waiver and estoppel.

627. Under California law, "'waiver' means the intentional relinquishment or abandonment of a known right. Waiver requires an existing right, the waiving party's knowledge of that right, and the party's actual intention to relinquish the right." *Lynch v. Cal. Coastal Comm'n*, 3 Cal. 5th 470, 475 (2017) (citation and quotation marks omitted). "Waiver always rests upon intent. The intention may be express, based on the waiving party's words, or implied, based on conduct that is so inconsistent with an intent to enforce the right as to induce a reasonable belief that such right has been relinquished." *Id.* (citation and quotation marks omitted).

628. Under California law, for equitable estoppel to apply, "(1) the party to be stopped must be apprised of the facts; (2) he must intend that his conduct shall be acted upon, or must so act that the party asserting the estoppel has a right to believe it was so intended; (3) the

[50] Waiver and estoppel are addressed in §§ 17.2–17.3, pages 123–24 of the Joint Elements Submission.

other party must be ignorant of the true state of facts; and (4) he must rely upon the conduct to his injury." *Strong v. County of Santa Cruz*, 15 Cal. 3d 720, 725 (1975).

629. The elements of waiver and estoppel under California law are thus substantively identical to the elements under federal law. Accordingly, for all of the same reasons described above with respect to the Sherman Act claims, *see supra* § III.D.ii (¶¶ 554–60), Epic's state-law claims, even were they otherwise meritorious, are barred by waiver and estoppel.

ii. Limitations on Actions (Epic Counts 7–10)[51]

630. Like its federal law claims, Epic's state-law claims are untimely, and thus would have to be dismissed even if they had merit (which they do not).

631. "The statute of limitations under the Cartwright Act and UCL is four years." *Bartlett v. BP W. Coast Prods. LLC*, No. 18-CV-1374, 2019 WL 2177655, at *2 (S.D. Cal. May 17, 2019) (citing Cal. Bus. & Prof. Code §§ 16750.1, 17208); *see also Garrison v. Oracle Corp.*, 159 F. Supp. 3d 1044, 1062 (N.D. Cal. 2016) (same). In California, the "common law last element accrual rule is the default," *Aryeh v. Canon Bus. Sols., Inc.*, 55 Cal. 4th 1185, 1196 (2013), which provides that, "ordinarily, the statute of limitations runs from the occurrence of the last element essential to the cause of action," *id.* at 1191 (quotation marks omitted). In light of the California Supreme Court's direction that "[i]nterpretations of federal antitrust law" are instructive (though not conclusive) when construing the Cartwright Act, *id.* at 1195, courts frequently consider and resolve questions of the limitations on federal antitrust claims in tandem with Cartwright Act and UCL claims, *see Garrison*, 159 F. Supp. 3d at 1064–65 (collecting cases).

632. The same analysis that leads to the conclusion that Epic's Sherman Act claims are time-barred, *see supra* § III.D.iii (¶¶ 561–77), also mandates that its state-law claims are untimely for the same reasons. Thus, even if Epic could make out a claim under the Cartwright Act or the UCL, its claims would have to be dismissed as untimely.

V. EPIC'S REMEDIES

633. Because Epic cannot prevail on the merits of any of its claims, it is entitled to no relief. However, even if Epic's claims had merit, it would not be entitled to the equitable relief it seeks.

B. Declaratory Judgment (All Epic Counts)

634. The legal framework for declaratory judgment relief is set forth below, *see infra* § VII.C (¶¶ 831–39).

635. Epic is not entitled to any declaratory relief because its claims lack merit.

[51] Limitations on actions are addressed in § 17.4, pages 125–26 of the Joint Elements Submission.

C. Sherman Act / Clayton Act Remedies (Epic Counts 1–6)

636. As relief for its Sherman Act claims, Epic invokes the Clayton Act and seeks sweeping equitable relief. No such relief is warranted in this case because Epic cannot establish liability under any of its Sherman Act theories. Even if liability were found, Epic's requested injunctive relief must be rejected for a variety of reasons.

637. The Clayton Act provides, "[a]ny person, firm, corporation, or association shall be entitled to sue for and have injunctive relief, in any court of the United States having jurisdiction over the parties, against threatened loss or damage by a violation of the antitrust law, including sections 13, 14, 18, and 19 of this title, when and under the same conditions and principles as injunctive relief against threatened conduct that will cause loss or damage is granted by courts of equity, under the rules governing such proceedings." 15 U.S.C. § 26.

ii. Injunctive Relief Sought by Epic

638. In its Complaint, Epic sought a judgment:

> A. Issuing an injunction prohibiting Apple's anti-competitive conduct and mandating that Apple take all necessary steps to cease unlawful conduct and to restore competition;
>
> B. Awarding a declaration that the contractual and policy restraints complained of herein are unlawful and unenforceable;
>
> C. Awarding any other equitable relief necessary to prevent and remedy Apple's anti-competitive conduct; and
>
> D. Granting such other and further relief as the Court deems just and proper.

Dkt. 1 at 61–62.

639. At a hearing on October 19, 2020, the Court advised Epic that its request for relief was "pretty broad and pretty vague." Hr'g Tr. 10:19–20 (Oct. 19, 2020). The Court directed Epic to include in the parties' joint submission on the elements "what remedy [Epic is] seeking for each one of [its] claims," and "[t]o the extent that [Epic is] seeking for [the Court] to in effect dismantle the platform, then [the Court] want[s] to know again in advance where that authority comes from and to the extent that there are other courts that have imposed such sanctions or such remedies, [the Court would] like to have copies of those orders." *Id.* at 10:16–24.

640. In the Appendix to the parties' joint elements submission, Epic provided the Court with its proposed relief.

641. With respect to the proposed "iOS App Distribution Market," Epic requested that the Court issue the following relief:

> 1. Enjoin Apple from further violations of Section 1 and/or Section 2 of the Sherman Act, the Cartwright Act and/or the California Unfair Competition

Law with respect to the iOS App Distribution Market and/or the App Store on the iOS platform;

2. Enjoin Apple from restricting, prohibiting, impeding or deterring the distribution of iOS apps through a distribution channel other than the App Store, including by:

   A. Restricting, prohibiting, impeding or deterring users of iOS devices, through technical, contractual, financial, or other means, from downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store;

   B. Enforcing contractual provisions, guidelines or policies, or imposing technical restrictions or financial penalties, that (i) restrict, prohibit, impede or deter the distribution of iOS apps through a distribution channel other than the App Store or (ii) have the effect of impeding or deterring competition among app distributors (including competition between third party app distributors and the App Store);

   C. Conditioning access of developers to iOS on the pricing of their apps or in-app content on other platforms;

   D. Conditioning access of developers to the App Store on the pricing of their apps or in-app content on other platforms and/or on the pricing of their iOS apps or in-app content available through other distribution channels;

   E. Conditioning distribution through the App Store on exclusivity or on an agreement by a developer not to distribute an iOS app through other means; and

   F. Retaliating or threatening to retaliate against any developer on the basis of the developer's choice of iOS app distribution channel;

3. Enjoin Apple from discriminating against or disadvantaging iOS app distribution through channels other than the App Store, including by:

   A. Denying iOS app stores access to iOS functionality that the App Store has access to, including iOS functionality that assists in or is required for the downloading, execution, installation, updating and removal of apps;

   B. Denying iOS apps that were downloaded through a distribution channel other than the App Store equivalent access to iOS functionality and/or features that iOS apps downloaded through the App Store have access to;

C. Deterring users from downloading, executing, installing and/or updating iOS apps from or through an app distribution channel other than the App Store, including by imposing "warning" screens or other user obstructions or deterrents on iOS apps distributed through channels other than the App Store that are not present for apps distributed through the App Store;

4. To remedy Apple's past misconduct and its anticompetitive effects in the iOS App Distribution Market and other relevant markets, and in order to restore competition in the iOS App Distribution Market, Epic respectfully requests that the Court further grant the following time-limited relief, which shall be effective from the date of this Order for a period of three (3) years or other amount of time found by the Court to be appropriate:

A. Enjoin Apple from enforcing contractual provisions, guidelines or policies, or imposing technical restrictions, that restrict, prohibit, impede or deter distribution of iOS app stores through the App Store.

Dkt. 276-1, Appendix A at 3–5.

642. With respect to the proposed "iOS In-App Payment Processing Market," Epic requested that the Court issue the following relief:

1. Enjoin Apple from further violations of Section 1 and/or Section 2 of the Sherman Act, the Cartwright Act and/or the California Unfair Competition Law with respect to the In-App Payment Processing Market;

2. Enjoin Apple from restricting, prohibiting, impeding or deterring the use of in-app payment processors other than Apple's In-App Purchase ("IAP"), including by:

A. Rejecting iOS apps for distribution through the App Store or retaliating or threatening to retaliate against any developer of an iOS app on the basis of the developer's or the app's actual or intended integration of one or more non-IAP payment processors;

B. Enforcing contractual provisions, guidelines or policies, or imposing technical restrictions or financial penalties, that (i) restrict, prohibit, impede or deter developers from integrating payment processors other than Apple's IAP into their apps for processing in-app purchases of in-app content or (ii) have the effect of impeding or deterring competition among in-app payment processors;

3. Enjoin Apple from discriminating against payment processors other than Apple's IAP, iOS developers that use payment processors other than

Apple's IAP, or iOS apps or app stores that use payment processors other than Apple's IAP, including by:

A. Denying access to iOS apps or app stores that use payment processors other than Apple's IAP, to the same iOS functionality and/or features that apps using exclusively Apple's IAP for processing in-app purchases of in-app content have;

B. Giving preferential treatment in search to iOS apps that exclusively use Apple's IAP; and

4. Enjoin Apple from imposing a financial penalty or technical limitation on access to the iOS platform by iOS apps (including iOS app stores) that use payment processing solutions other than or in addition to Apple's IAP.

Dkt. 276-1, Appendix A at 6–7.

643. Epic also has proposed an "anti-circumvention" provision:

Epic respectfully requests that the Court enjoin Apple from circumventing this Order by taking steps that violate the purpose, if not the terms, of this Order, including by imposing disincentives or providing incentives that are designed to, and have the effect of, making real competition in the iOS App Distribution Market and/or the In-App Payment Processing Market impracticable.

Dkt. 276-1, Appendix A at 7.

644. And finally, Epic proposed an "anti-retaliation" provision:

Epic respectfully requests that the Court permanently enjoin Apple from taking any retaliatory actions against Epic or any of its affiliates in connection with or based on Epic's filing of this Action, the August 2020 enablement of a direct payment option in *Fortnite*, or the steps Epic took to enable that option ("Prior Epic Actions"). For the avoidance of doubt, prohibited retaliatory actions include conduct by Apple that denies *Fortnite* access to Apple's App Store on the basis of such Prior Epic Actions.

Dkt. 276-1, Appendix A at 7.

645. On its face, Epic's requested relief is sweeping and would implement wholesale changes to the most fundamental aspects of Apple's security and business models for the App Store. Indeed, the relief Epic seeks underscores the danger of recognizing a refusal-to-deal claim premised on the notion that Apple must give Epic access to iOS and the App Store on the terms and conditions that Epic demands. The Supreme Court has warned that this kind of relief is not only contrary to the purpose of the antitrust laws, but also requires the courts to act as "central planners":

> Firms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers. Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen eh incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other teams of dealing—a role for which they are ill suited.
>
> *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407–08 (2004).

646. Epic's requested relief would require judicial supervision of a technical redesign of iOS and the App Store, along with technical support to ensure interoperability of third-party app stores on iOS. It would require Apple to license and provide access to its protected intellectual property to third parties and competitors on terms demanded by Epic. And Epic likely would invoke the Court's continuing jurisdiction to oversee any future changes to iOS.

647. As set forth in detail below, neither the Clayton Act nor general principles of equity give the Court such broad authority to instruct Apple how it must conduct its business: an equitable antitrust remedy designed "for the purpose of alleviating injury to something other than the competitive system serves no antitrust purpose." *In re Multidistrict Vehicle Air Pollution*, 538 F.2d 231, 236 (9th Cir. 1976).

648. As but one example, Epic objects that Apple has imposed certain "contractual restrictions" on developers that, it says, inhibits competition. Dkt. 1 ¶¶ 68–81. Epic has identified a limited number of specific restrictions, namely, Sections 3.2(g) and 3.3.2(b) of the DPLA. *Id.* Were the Court to find that one or more of these provisions is unlawful, an appropriately tailored injunction would target only those provisions, leaving the balance of the DPLA intact and permitting Apple to modify (or not modify) the remainder of the contract or restructure its business operations appropriately. *See also infra* § VI.E.i.b (¶ 801).

649. The Court also is mindful of the law of unintended consequences. While Epic has proposed an injunction that presumably will benefit *it*, the dramatic changes it would impose on the existing market structure could have far-reaching and unpredictable consequences, potentially to the detriment of consumers and developers.

650. For example, Epic seeks to require Apple to distribute third-party app stores through the iOS App Store. *See* Dkt. 276-1, Appendix A at 3–5. Android devices, however, already permit sideloading and distribution of apps and third-party app stores. *See, e.g.* FOF ¶ 621 (discussing Epic's launch of *Fortnite* on Android via sideloading). Consumers thus currently have a choice—they can choose to use an iOS device with the greater security, privacy, and reliability that come with a "walled garden," or they can choose to use an Android device with lesser security but with more app store options. Epic's proposed relief would eliminate that choice, foisting onto consumers a one-size-fits-all model that might benefit Epic, but inhibit competition and consumer choice.

651. As another example, Epic seeks to require Apple to permit alternatives to IAP. *See* Dkt. 276-1, Appendix A at 6. If Epic prevailed on its claims relating to IAP, Apple could decide to prohibit in-game purchases of digital content—the business model on which Epic has made its billions. Or Apple might charge different commission rates or program fees to developers that use IAP than to those that do not. Apple might require collateral or other security from non-IAP developers to ensure the payment of its commission. Epic has made no showing that any of these alternative business models (or a host of others) would be impermissible, or that any of them would improve competition or developer welfare. Epic's entire remedial approach thus assumes that Apple will abandon certain practices while leaving everything the same, but the Court cannot constrain a private firm's business in that way.

652. The Court's evaluation of Epic's proposed relief thus must take into account these considerations.

iii. Antitrust Standing and Injury[52]

653. "'Antitrust standing' is a threshold requirement that every plaintiff must satisfy to bring a private suit under the federal antitrust laws." *Lorenzo v. Qualcomm Inc.*, 603 F. Supp. 2d 1291, 1300 (S.D. Cal. 2009). "To have standing [to seek injunctive relief] under § 16 [of the Clayton Act], a plaintiff must show (1) a threatened loss or injury cognizable in equity (2) proximately resulting from the alleged antitrust violation." *City of Rohnert Park v. Harris*, 601 F.2d 1040, 1044 (9th Cir. 1979).

654. Because "the judicial remedy cannot encompass every conceivable harm that can be traced to alleged wrongdoing," courts have imposed additional limits "to determine whether a party injured by an antitrust violation" may seek relief. *Associated Gen. Contractors of Cal., Inc. v. Cal. State Council of Carpenters*, 459 U.S. 519, 536 (1983). In assessing antitrust standing, courts also consider "(1) whether the plaintiff's alleged injury is the type the antitrust laws were intended to forestall; (2) the directness of the injury; (3) the speculative measure of the harm; and (4) keeping the scope of complex antitrust trials within judicially manageable limits." *Sacramento Valley Chapter of the Nat'l Elec. Contractors Ass'n v. IBEW, Local 340*, 888 F.2d 604, 605 & n.1 (9th Cir. 1989).

655. The requirement of antitrust standing under the Clayton Act overlaps with the requirement of antitrust injury. To establish standing, a plaintiff must show antitrust injury. *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 113 (1986).

656. There are "four requirements for antitrust injury: (1) unlawful conduct, (2) causing an injury to the plaintiff, (3) that flows from that which makes the conduct unlawful, and (4) that is of the type the antitrust laws were intended to prevent." *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1055 (9th Cir. 1999).

[52] Antitrust standing and injury are addressed in §§ 18.2.1–18.2.2, pages 132–34 of the Joint Elements Submission.

657. The Ninth Circuit imposes a fifth requirement, that "the 'injured party be a participant in the same market as the alleged malefactors.'" *Glen Holly Entm't, Inc. v. Tektronix, Inc.*, 352 F.3d 367, 372 (9th Cir. 2003) (quoting *Bhan v. NME Hosps., Inc.*, 772 F.2d 1467, 1470 (9th Cir. 1985)). "In other words, the party alleging the injury must be either a consumer of the alleged violator's goods or services or a competitor of the alleged violator in the restrained market." *Id.* (quoting *Eagle v. Star-Kist Foods, Inc.*, 812 F.2d 538, 540 (9th Cir. 1987)). Under this requirement, a plaintiff must show that it has "suffered [an] injury in the market where competition is being restrained"—"[p]arties whose injuries, though flowing from that which makes the defendant's conduct unlawful, are experienced in another market do not suffer antitrust injury." *Am. Ad Mgmt., Inc. v. Gen. Tel. Co. of Cal.*, 190 F.3d 1051, 1057 (9th Cir. 1999).

658. Section 16 of the Clayton Act "requires a showing only of 'threatened' loss or damage," and does not require "a showing of injury to 'business or property.'" *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 111 (1986).

659. Although the standard for injunctive relief under Section 16 "differ[s] in various ways" from Section 4, a plaintiff suing under Section 16 must still prove "an injury of the type the antitrust laws were designed to prevent." *Cargill, Inc. v. Monfort of Colo., Inc.*, 479 U.S. 104, 111 (1986); *see also Feitelson v. Google Inc.*, 80 F. Supp. 3d 1019, 1028–29 (N.D. Cal. 2015) (dismissing injunctive claim because the plaintiffs allegedly suffered antitrust injury in a market other than that "in which the alleged anticompetitive conduct occurred" and the "[p]laintiffs' alleged price injury [did not] 'flow[] from that which ma[de] [the defendant's] conduct unlawful'").

660. For the reasons outlined above, *see supra* § III.A.iii (¶¶ 183–86), Epic cannot establish antitrust injury—or consequently, antitrust standing—as a matter of law. It thus is not entitled to any equitable relief under the Clayton Act.

iv. Standards for Equitable Relief[53]

661. "According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff 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 (2006).

662. Courts apply the *eBay* factors when evaluating requests for permanent injunctive relief under Section 16. *See Steves & Sons, Inc. v. JELD-WEN, Inc.*, 988 F.3d 690, 705 (4th Cir. 2021) (applying the *eBay* factors when analyzing permanent equitable relief); *Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., Ltd.*, No. 16-CV-6370, 2020 WL 1812257, at *2 (N.D. Cal. Apr. 9, 2020), *appeal filed*, No. 20-15837 (9th Cir. May 1, 2020) ("These four

[53] The standards for equitable relief are addressed in § 18.2.3, pages 135–41 of the Joint Elements Submission.

elements [from eBay] apply when considering relief under Section 16 of the Clayton Act."); *Avaya Inc. v. Telecom Labs, Inc.*, No. 06-CV-2490, 2014 WL 2940455, at *3 (D.N.J. June 30, 2014) (holding that it is "clear that the more restrictive four-factor [eBay] test is necessary" in antitrust cases).

663. That is because Section 16 of the Clayton Act provides for equitable relief only "under the same conditions and principles as injunctive relief against threatened conduct that will cause loss or damages is granted by courts of equity." 15 U.S.C. § 26. Section 16, "which was enacted by the Congress to make available equitable remedies previously denied private parties, invokes traditional principles of equity." *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 131 (1969).

664. The Ninth Circuit has expressly held that an injunction may not issue under Section 16 absent a showing of "irreparable harm." *Lucas v. Bechtel Corp.*, 800 F.2d 839, 847 (9th Cir. 1986) ("Under any formulation of the test, plaintiff must demonstrate that there exists a significant threat of irreparable injury." (quotation marks omitted)). "[T]he basis of injunctive relief in the federal courts has always been irreparable harm and inadequacy of legal remedies." *Sampson v. Murray*, 415 U.S. 61, 88 (1974).

665. The only apparent deviation from this authority is *O'Bannon v. National Collegiate Athletic Ass'n*, 7 F. Supp. 3d 955 (N.D. Cal. Aug. 8, 2014), *aff'd in part, vacated in part*, 802 F.3d 1049 (9th Cir. 2015), in which the court did not cite or discuss the controlling language in Section 16 or the Supreme Court and Ninth Circuit cases demanding application of the traditional equitable factors, or indeed, even acknowledge the four-factor test under *eBay*. *See id.* at 1007. This case is not persuasive or controlling.

666. Under *eBay*, "[t]he party seeking an injunction 'has the general burden of establishing the elements necessary' to obtain relief." *BladeRoom Grp. Ltd. v. Emerson Elec. Co.*, No. 15-CV-1370, 2019 WL 1117537, at *2 (N.D. Cal. Mar. 11, 2019) (citing *Klein v. City of San Clemente*, 584 F.3d 1196, 1201 (9th Cir. 2009)).

667. Epic cannot establish any of the elements for equitable relief under *eBay*.

b. Epic Has Not Established Irreparable Harm

668. Irreparable harm is that "for which there is no adequate legal remedy." *Ariz. Dream Act Coal. v. Brewer*, 757 F.3d 1053, 1068 (9th Cir. 2014). A plaintiff proves irreparable harm by showing that "remedies available at law, such as monetary damages, are inadequate to compensate for the injury," *Herb Reed Enters., LLC v. Fla. Entm't Mgmt., Inc.*, 736 F.3d 1239, 1249 (9th Cir. 2013), or that monetary damages are difficult to calculate, *see, e.g.*, *Optinrealbig.com, LLC v. Ironport Sys., Inc.*, 323 F. Supp. 2d 1037, 1050 (N.D. Cal. 2004) ("Damage to a business'[s] goodwill is typically an irreparable injury because it is difficult to calculate.").

669. An equitable remedy is "unavailable absent a showing of irreparable injury." *City of Los Angeles v. Lyons*, 461 U.S. 95, 111 (1983). The named plaintiff must prove that it—and not some other person or entity—will be irreparably harmed. *See, e.g.*, *Doran v. Salem Inn, Inc.*, 422 U.S. 922, 931 (1975) (concluding that "neither declaratory nor injunctive

relief" can issue "except with respect to the particular federal plaintiffs"); *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1337–40 (Fed. Cir. 2012); *Voda v. Cordis Corp.*, 536 F.3d 1311, 1329 (Fed. Cir. 2008). Non-party affiliates of the plaintiff do not suffice. *See, e.g.*, *Weeks Marine, Inc. v. TDM Am., LLC*, No. CIV.A. 11-3850 ES, 2011 WL 6217799, at *7 (D.N.J. Dec. 14, 2011); *Balsam Brands Inc. v. Cinmar, LLC*, No. 15-CV-4829, 2015 WL 7015417, at *5 (N.D. Cal. Nov. 12, 2015).

670. A "long delay before seeking a[n] . . . injunction implies a lack of urgency and irreparable harm." *Miller ex rel. NLRB v. Cal. Pac. Med. Ctr.*, 991 F.2d 536, 544 (9th Cir. 1993).

671. Epic cannot show irreparable harm. Epic has been profitably distributing apps through the App Store for over ten years now. FOF ¶¶ 252-253. With respect to *Fortnite* alone, Epic has made hundreds of millions of dollars through digital transactions on the App Store. FOF ¶ 264. If Epic had instead distributed through other major platforms, it would have had to pay the same 30% commission it paid to Apple. FOF ¶ 249.18. It has not been injured as a consequence of Apple's conduct, but rather only has been forced to pay for its licensed use of Apple's intellectual property.

672. Moreover, Epic can and does distribute *Fortnite* and other games to iOS users through means other than the App Store. As discussed in detail above, *see supra* § II.B.ii.a (¶¶ 39–45), iOS users of *Fortnite* have access to many other devices—and accordingly, many other digital transaction platforms—through which they can play *Fortnite*. Indeed, Epic itself ran advertisements following *Fortnite*'s removal from the App Store as part of its public relations campaign, encouraging iOS users to access *Fortnite* through other devices. FOF ¶ 304.

673. Even if the Court were to focus only on iOS devices, Epic cannot prove irreparable injury for three additional and separate reasons. *First*, Epic remains free to develop and distribute a web app version of *Fortnite* that iOS users can access through the Safari web browser without going through the App Store, as other game developers have done. FOF ¶ 529.2. That Epic has chosen not to do so thus far is a consequence of its own choices, not Apple's. *Second*, Apple has at all relevant times supported cross-platform play, including in-game purchases, so that iOS *Fortnite* players may purchase V-Bucks on another platform (such as a PC) and use them on an iOS device, without transacting through the App Store. FOF ¶¶ 165.3, 255.4, 367. iOS *Fortnite* users can even use the Safari web browser to purchase V-Bucks directly from Epic on their iPhone. FOF ¶ 165.3. Some other digital transaction platforms do not offer this cross-platform purchase feature. FOF ¶ 165.3. *Third*, there is a new category of emerging game streaming services, which facilitate access to games from any device without using the App Store. Most relevant here, *Fortnite* is expected to soon be available on Nvidia GeForce Now for iOS users, providing an alternative means for Epic to reach *all* of the iOS consumers that it could otherwise reach through the App Store. FOF ¶ 503.

674. Epic launched its campaign against Apple [redacted], suggesting that Epic is not motivated by any "irreparable" harm to its business caused by Apple, but rather a desire to find ways to improve its business model at the expense of Apple's. This ten-year, self-serving delay makes clear that Epic has not suffered

irreparable injury. *See Miller ex rel. N.L.R.B. v. Cal. Pac. Med. Ctr.*, 991 F.2d 536, 544 (9th Cir. 1993).

c. Epic Has Adequate Remedies at Law

675. "'The necessary prerequisite' for a court to award equitable remedies is 'the absence of an adequate remedy at law.'" *Barranco v. 3D Sys. Corp.*, 952 F.3d 1122, 1129 (9th Cir. 2020) (quoting *Dairy Queen, Inc. v. Wood*, 369 U.S. 469, 478 (1962) (internal quotation marks omitted)).

676. Whether remedies available at law are inadequate to compensate for the injury "inevitably overlaps" with the first prong of the injunctive relief analysis. *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 518 F. Supp. 2d 1197, 1219 (C.D. Cal. 2007); *Optronic Techs., Inc. v. Ningbo Sunny Elec. Co., Ltd.*, No. 16-CV-6370, 2020 WL 1812257, at *2–3 (N.D. Cal. Apr. 9, 2020) (analyzing the first two elements together). However, "[i]n the permanent injunction analysis, whether the plaintiff has an 'inadequate remedy at law' is a separate factor." *Macnab v. Gahderi*, No. 09-CV-4498, 2009 WL 10671026, at *5 n.4 (C.D. Cal. July 28, 2009). Some courts have held that where "there is the possibility of future wrongful conduct, a legal remedy is inadequate." *Valley View Health Care, Inc. v. Chapman*, 992 F. Supp. 2d 1016, 1042 (E.D. Cal. 2014).

677. One of the longstanding, "basic requisites [for] the issuance of equitable relief" from a federal court is "the inadequacy of remedies at law." *O'Shea v. Littleton*, 414 U.S. 488, 502 (1974). A plaintiff who could have pursued redress through a damages award, but waived such a request, has an adequate remedy at law. *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 844–45 (9th Cir. 2020); *see also Huynh v. Quora, Inc.*, No. 18-CV-7597, 2020 WL 7495097, at *19 (N.D. Cal. Dec. 21, 2020) ("Cases in this Circuit have held that *Sonner* extends to claims for injunctive relief.").

678. Private plaintiffs may seek damages for violations of the antitrust laws, 15 U.S.C. § 15, but where a party "explicitly represent[s] that it [is] not seeking damages," that representation "preclude[s] the possibility of an award of damages at trial." *Infor Global Sols. (Mich.), Inc. v. St. Paul Fire & Marine Ins. Co.*, No. 08-CV-2621, 2010 WL 11583380, at *5 (N.D. Cal. Apr. 2, 2010); *see also GSI Tech., Inc. v. United Memories, Inc.*, No. 13-CV-1081, 2016 WL 3017544, at *11 (N.D. Cal. May 26, 2016), *aff'd*, 721 F. App'x 491 (9th Cir. 2017).

679. In *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834 (9th Cir. 2020), the plaintiff amended her complaint on the eve of trial to drop her damages claim, and then urged that she had no adequate remedy at law and was entitled to equitable restitution in the same amount as her abandoned damages claim. *Id.* at 844–45. The Ninth Circuit rejected that argument, observing that the plaintiff had not "explain[ed] how the same amount of money for the exact same harm is inadequate or incomplete." *Id.* at 844.

680. For reasons similar to those stated above, Epic has an adequate remedy at law—it could have sought damages for its alleged loss of revenues as a result of the 30% commission it agreed to pay Apple. Indeed, the plaintiffs seeking to represent a class of developers *have*

sought monetary damages for their virtually identical antitrust claims. *See* Consolidated Class Action Complaint at 47, *Cameron v. Apple Inc.*, No. 19-CV-3074 (N.D. Cal. Sept. 30, 2019). Having had the opportunity to seek damages, but electing to forgo it, Epic cannot satisfy the requirement of having no adequate remedy at law. The Ninth Circuit has made clear that a party cannot artificially satisfy this element by simply choosing not to seek damages. *See Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 844–45 (9th Cir. 2020).

681. Epic elected to bring this case solely for equitable relief, and having done so, it bears the burden of showing that it could not have obtained monetary damages instead. For all of the reasons above, it cannot.

d. The Balance of Hardships Favors Apple

682. In considering the balance of hardships between the plaintiff and defendant, the Court "must consider the effect on each party of the granting or withholding of the requested relief." *Klein v. City of San Clemente*, 584 F.3d 1196, 1199–200 (9th Cir. 2009) (quoting *Winter v. Nat'l Res. Def. Council, Inc.*, 555 U.S. 7, 24 (2008)).

683. The balance of the hardships decidedly favors Apple. Epic's proposed relief, although framed in nominally prohibitive terms, would in fact be expressly and effectively prescriptive. It sets forth a comprehensive set of measures that Apple must undertake that would fundamentally alter the way in which Apple interacts with developers and consumers. It would disrupt the comprehensive iOS ecosystem that Apple has built up over the years and would require Apple to rework its business operations. *See, e.g.* FOF ¶¶ 623-625. This would include, but is not limited to, requiring Apple to modify or alter the manner in which apps may be installed on iOS devices, requiring Apple to modify the on-device security protections that it has designed for iOS, such as sandboxing, and requiring Apple to provide apps distributed through third-party app stores access to current and future iOS device hardware and software functionality.

684. There is no dispute that the distribution of native iOS apps requires the use of Apple's intellectual property, yet Epic's proposed relief includes no provision for Apple to receive compensation for the licensing of its intellectual property, nor have the ability to set the terms for the usage of that intellectual property that Epic seeks to compel. *See generally* Dkt. 276-1, Appendix A. In other words, under Epic's prescriptive injunction, it and every other developer would apparently pay only a nominal $99 annual fee to use and benefit from Apple's intellectual property in perpetuity. This amounts to a forced, compulsory license of Apple's intellectual property that is not calibrated to the property being licensed. Such a near-complete appropriation of Apple's innovation imposes a substantial hardship on Apple. (If imposed by governmental decree, including an injunction, it also would constitute an uncompensated taking prohibited by the Fifth Amendment.)

685. Epic's relief goes even further, though, and would prohibit Apple from controlling the distribution of app stores through the App Store *at all* for a period of three years. Epic demands that Apple be enjoined for three years "from enforcing contractual provisions, guidelines or policies, or imposing technical restrictions, that restrict, prohibit, impede or

deter distribution of iOS app stores through the App Store." Dkt. 276-1, Appendix A at 5. In other words, Apple has *no* rights to curate the distribution of rival app stores through the App Store—even if such a store openly engaged in the distribution of pornography, graphic violence, or other content prohibited by Apple's guidelines, Apple could not prevent its distribution on the App Store. Epic's requested relief thus seeks to preclude Apple from creating and enforcing the compliance of such apps with any security, privacy, and reliability standards developed by Apple.

686. Meanwhile, Epic would be the beneficiary and suffer no hardship at all. It would gain access to Apple's intellectual property on its preferred terms, without having to go through the App Store or comply with the App Store Review Guidelines. Tellingly, Epic's requested relief does not contemplate any payments from Epic to Apple for its continued use of Apple's intellectual property, nor even a mechanism for evaluating what an appropriate amount of compensation for ongoing use of Apple's intellectual property would be. Epic could "compete" with the App Store, using Apple's intellectual property and relying upon Apple's ongoing innovations in iOS hardware and software functionality and security, but without ever having to invest in the development of an operating system, providing compensation for use of such intellectual property, or adhering to any terms that Apple views as appropriate for the licensing of its exclusive property rights. In other words, Epic would receive all of the upside of Apple's innovative designs, with none of the costs. The hardships plainly weigh in favor of Apple and against the injunction.

687. The fact that Epic's requested relief would purportedly enjoin unlawful activity does not mean the hardships weigh in favor of Epic. *All* injunctions are issued to prevent unlawful activity (or to compel conduct required by law). That does not automatically satisfy the balance-of-hardships factor. Rather, "[i]n each case, a court must balance the competing claims of injury and must consider the effect on each party of the granting or withholding of the requested relief." *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 542 (1987).

e. Epic's Proposed Relief Would Not Further the Public Interest

688. "[T]he public interest inquiry primarily addresses impact on non-parties rather than parties and takes into consideration" the "public consequences" of the injunction. *hiQ Labs, Inc. v. LinkedIn Corp.*, 938 F.3d 985, 1004 (9th Cir. 2019) (quotation marks omitted).

689. Epic seeks an order from this Court precluding Apple from enforcing its longstanding prohibitions against apps containing pornography and other offensive content, as well as apps that may carry malicious code or spyware. Dkt. 276-1, Appendix A at 5. In other words, Epic seeks to compromise the security and privacy of iOS users—including children—so that it may sell more V-Bucks on terms of its own choosing.

690. Moreover, Epic's own expert—Dr. Cragg—has explained the harm to the public interest if courts act as semi-regulators in issuing injunctive relief under the antitrust laws. In an *amicus* brief he joined in the Supreme Court, Dr. Cragg explained that a "short-run regulatory solution" that is "designed to force [a firm] to provide even more competition than it did through its creation, threatens long-run incentives to create the very products they want more of." Brief of Expert Antitrust Economists as *Amici Curiae* in Support of

Petitioners at 18–19, *Nat'l Football League v. Ninth Inning, Inc.*, No. 19-1098 (U.S. Apr. 8, 2020). In another brief recently submitted in a pending case, Dr. Cragg and other *amici* cautioned against injunctive relief in antitrust cases that would work a fundamental change in a firm's business model, explaining that "this type of after-the-fact speculation inevitably creates disincentives for businesses to form collaborations, invest in product design and development and continually innovate, as there is no assurance that a court will not use injunctive relief to revise those decisions and impose different models." Brief of *Amici Curiae* Antitrust Economists in Support of Petitioners at 12, *Nat'l Collegiate Athletic Ass'n v. Alston*, No. 20-512 (U.S. Nov. 18, 2020).

691. An injunction is not automatic even upon a finding of antitrust liability. *See, e.g.*, *Wilk v. Am. Med. Ass'n*, 895 F.2d 352, 370 n.5 (7th Cir. 1990) ("The important point is that equitable relief is discretionary, and not automatically available to an injured plaintiff."); *Moore Drug Exch. v. Eli Lilly & Co.*, No. 76-CV-2817, 1980 WL 1959, at *2 (S.D.N.Y. Nov. 21, 1980) ("A finding of an antitrust violation in the past, and an award of treble damages pursuant thereto, do not automatically entitle the plaintiff to permanent injunctive relief."); 6C Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 653 (4th ed. 2020 supp.) ("[I]t never follows automatically from the finding of a § 2 violation that . . . an injunction against future conduct is justified."). If the equitable factors disfavor injunctive relief, then a court may provide an alternative remedy such as a declaration.

f. Epic's Proposed Equitable Relief Is Barred by the Doctrine of Unclean Hands

692. Even if Epic could otherwise establish the elements of injunctive relief, its requested relief is barred by the doctrine of unclean hands.

693. Epic initiated this lawsuit and, from the outset, sought only equitable relief—first a temporary restraining order, then a preliminary injunction, and now a permanent injunction. But "equity requires that those seeking its protection shall have acted fairly and without fraud or deceit as to the controversy in issue." *Ellenburg v. Brockway, Inc.*, 763 F.2d 1091, 1097 (9th Cir. 1985), *abrogated on other grounds by Watkins v. Westinghouse Hanford Co.*, 12 F.3d 1517 (9th Cir. 1993). The doctrine of unclean hands therefore precludes equitable relief where the defendant establishes that "(1) the plaintiff engaged in inequitable conduct; and (2) the conduct 'relates to the subject matter of its claims.'" *Pipe Restoration Techs., LLC v. Coast Bldg. & Plumbing, Inc.*, No. 13-CV-499, 2018 WL 6012219, at *9 (C.D. Cal. Nov. 16, 2018) (quoting *Levi Strauss & Co. v. Shilon*, 121 F.3d 1309, 1313 (9th Cir. 1997)).

694. Epic has previously taken the position that unclean hands is not a defense to liability under the federal antitrust laws. *See* Dkt. 61 at 2. That is presumably because the Sherman Act establishes a statutory tort with a damages remedy, and thus in general creates a *legal* rather than an equitable cause of action. *See Tull v. United States*, 481 U.S. 412, 422–23 (1987) Epic, however, seeks only an equitable *remedy*, and misconduct by the plaintiff may—indeed, must—be taken into account when a court is asked to impose an equitable remedy. *See, e.g.*, *Heldman v. U.S. Lawn Tennis Ass'n*, 354 F. Supp. 1241, 1249 (S.D.N.Y. 1973)

("While the so-called clean hands doctrine may provide no defense to an antitrust violation when the merits are being decided, at this stage this equitable doctrine may well be applied . . . .").

695. "Inasmuch as the decision whether to grant a temporary-restraining order, preliminary injunction, or permanent injunction is based on the trial court's exercise of its equitable discretion, a district judge may decline to grant, either in whole or in part, plaintiff's request for injunctive relief, even though plaintiff may be entitled to some relief," and the court may "take account of the possible existence of certain defenses that historically have been available in equity even though the applicant has presented a seemingly meritorious claim for an injunction." 11A Charles Alan Wright & Arthur R. Miller, *Federal Practice and Procedure* § 2946 (3d ed. 2020 update). Accordingly, "[a]s a matter of public policy, equitable relief typically will not be granted to an individual who has acted in bad faith with respect to the transaction that has been brought before the court." *Id.* "[T]raditional equitable considerations such as . . . unclean hands may militate against issuing an injunction that otherwise" meets the requirements for injunctive relief. *Inst. of Cetacean Research v. Sea Shepherd Conservation Soc'y*, 725 F.3d 940, 947 (9th Cir. 2013).

696. There is no question that Epic's conduct was inequitable. [redacted] In order to do so, it had to find a way around Apple's commission. FOF ¶ 269. It therefore devised a legal and public relations strategy to attack the longstanding App Store model, claiming anticompetitive conduct so that it could obtain use of Apple's intellectual property for free. FOF ¶¶ 272, 282. The effort, Project Liberty, culminated in the delivery of a Trojan Horse in the form of a surreptitiously planted "hotfix" in an otherwise ordinary update to *Fortnite*, which would allow Epic to bypass IAP when activated and avoid paying Apple its commission. FOF ¶¶ 299-300. Epic did activate the "hotfix," without alerting Apple, and raked in millions of dollars of digital transactions that should have been subject to the commission memorialized in the DPLA, which Epic had renewed just months earlier. FOF ¶ 300.

697. Nor is there any question that Epic's inequitable conduct relates to the subject matter of the claims. Project Liberty was also designed to culminate in litigation following the removal of *Fortnite* from the App Store. FOF ¶¶ 290, 303. [redacted] Epic's conduct does not just "relate" to the subject matter of the claims; it is inextricably linked to them in every way.

698. Epic knew what it was doing—it knew it was breaching the DPLA, it knew that it was taking advantage of Apple's intellectual property without compensation, and it knew Apple would remove the *Fortnite* app and that litigation would follow. FOF ¶ 294. Project Liberty was designed from the start to cast Epic as the hero in its own story, but to do so, Epic had to knowingly and consciously break its agreement with Apple and divest Apple of millions of dollars in revenue.

699. Accordingly, Epic engaged in inequitable conduct and that conduct related to the claims in this case. Epic therefore comes to this Court with unclean hands and cannot obtain the sweeping equitable relief that it seeks.

v. Epic's Proposed Injunction Is Overbroad[54]

700. "Once plaintiffs establish they are entitled to injunctive relief, the district court has broad discretion in fashioning a remedy." *Orantes-Hernandez v. Thornburgh*, 919 F.2d 549, 558 (9th Cir. 1990); *FTC v. John Beck Amazing Profits LLC*, 888 F. Supp. 2d 1006, 1011 (C.D. Cal. 2012), *aff'd*, 644 F. App'x 709 (9th Cir. 2016) ("Courts enjoy broad discretion in fashioning suitable relief and defining the terms of a permanent injunction.").

701. Even if Epic otherwise was entitled to equitable relief (and to be clear, it is not), Epic's requested relief is far too broad in several respects.

702. *First*, Epic seeks unprecedented relief in the form of a dramatic restructuring of Apple's business model.

703. Although Epic's requested relief is phrased as a prohibitive injunction, in fact, it demands that Apple make affirmative changes to the design of the App Store in numerous ways. Epic requests that Apple be enjoined from "[r]estricting" through "technical" or "contractual" means the "downloading, executing, installing and/or updating iOS apps and app stores from a distribution channel other than the App Store." Dkt. 276-1, Appendix A at 3. The "technical" restrictions to which Epic refers are core aspects of the design of iOS—a "walled garden" environment that allows for the secure distribution of curated apps. FOF ¶ 46, 530. Apple has been operating the App Store in this way since its launch in 2008, and an entire ecosystem has been built around this core concept. FOF ¶ 46. To require Apple to redesign iOS in the way Epic demands would work a fundamental change in the entire ecosystem that the App Store supports.

704. Likewise, Epic's demand that Apple be enjoined from requiring the use of IAP for digital transactions would require Apple to redesign the App Store and develop a new model of compensation. IAP is an integrated feature of the App Store that provides many benefits to developers and consumers, including allowing smaller developers to benefit from a central payment feature that consumers are already familiar with. FOF ¶¶ 76-78. It also is the way that Apple receives compensation for its licensing of the intellectual property that comprises iOS and the App Store. FOF ¶ 59. Removing IAP as an integrated feature of the App Store would not only require a fundamental redesign, it also would devalue the platform as a whole.

705. This relief is unprecedented. No court has ever required a company to relinquish its rights in its own intellectual property on terms demanded by a competitor, or to tear down and rebuild the most basic components of its business model. Epic does not seek simply to

[54] The scope of injunctive relief is addressed in § 18.3.1, pages 142–49 of the Joint Elements Submission.

compel Apple to stop doing something; it seeks to compel Apple to make affirmative changes to the iOS that would be beneficial to Epic, at the expense of Apple's customers.

706. Although this Court requested that Epic provide precedential support for the relief it seeks, Hrg. Tr. at 10:22–24 (Oct. 19, 2020), Epic has provided none. In a prior submission, Epic provided a catalog of general principles of law regarding the permissible scope of equitable relief. *See* Dkt. 276 at 144–46 (e.g., "[a] court may enter an order that eliminates the consequences of the defendant's illegal conduct" (quotation marks omitted)). None of the cases invoked by Epic required a company to redesign its proprietary software (including integration of that software with its hardware as appropriate) from the ground up to accommodate a competitor seeking to use that intellectual property for its own purposes.

707. For example, Epic cited *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) for the proposition that a court may enter an order that "den[ies] to the defendant the fruits of its statutory violation, and ensure[s] that there remain no practices likely to result in monopolization in the future." *Id.* at 103. The D.C. Circuit in *Microsoft* of course *vacated* the divestiture remedy ordered by the district court, and thus Epic's citation is not even responsive to the Court's request, but even still, that broad statement of law does nothing more than assert the basic proposition that a Clayton Act remedy must be tailored to the alleged antitrust violation. So too with Epic's assertion that a court may enter an order that "eliminat[es] the consequences of the [defendant's] illegal conduct." *Nat'l Soc'y of Prof'l Eng'rs v. United States*, 435 U.S. 679, 698 (1978). These cases do nothing to establish the boundaries of the Court's equitable authority or the scope of the appropriate relief in a case like this.

708. The so-called "non-discrimination" orders that Epic cites also do not support the relief that it is seeking here. *See Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1201, 1225 (9th Cir. 1997); *United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295, 321, 352 (D. Mass. 1953). In none of those cases was the defendant enjoined to implement an entirely new business model on terms dictated by the plaintiff, including a compulsory license to intellectual property in which the defendant has exclusive rights under federal law.

709. The remainder of Epic's cited cases likewise do nothing more than offer broad statements about the power of a court to enjoin anticompetitive conduct. *See, e.g.*, *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 132 (1969) (enjoining "acts which are of the same type or class of unlawful acts which the court has found to have been committed"); *Lorain Journal Co. v. United States*, 342 U.S. 143, 154 (1951) (enjoining the defendant from "us[ing] its monopoly power to destroy threatened competition"). These cases do not suggest that a court-mandated restructuring of a defendant's business model is ever permitted in an antitrust case, or that such relief would be appropriate here.

710. Although the Court has broad discretion to fashion appropriate equitable relief, "[d]iscretion is not whim." *Martin v. Franklin Capital Corp.*, 546 U.S. 132, 139 (2005). The absence of authority supporting Epic's requested injunction establishes that it would be an abuse of discretion to adopt the sweeping relief sought by Epic.

711. *Second*, Epic's proposed equitable relief is overbroad in that it goes further than is needed to remedy the antitrust violations alleged.

712. Equitable relief should be based "on some clear 'indication of a significant causal connection between the conduct enjoined or mandated and the violation found directed toward the remedial goal intended.'" *United States v. Microsoft Corp*., 253 F.3d 34, 105 (D.C. Cir. 2001) (quoting 6C Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 653(b) (1996)).

713. Ultimately, the goal of an equitable remedy is not the "punishment of past transgression, nor is it merely to end specific illegal practices." *Int'l Salt Co. v. United States*, 332 U.S. 392, 401 (1947), *abrogated on other grounds by Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006).

714. Equitable relief in an antitrust case should not "embody harsh measures when less severe ones will do," 3D Philip E. Areeda & Herbert Hovenkamp, *Antitrust Law: An Analysis of Antitrust Principles and Their Application* ¶ 325a (5d ed. 2020), nor should it adopt over regulatory requirements which will "involve the judiciary in the administration of intricate and detailed [business management]," *United States v. Paramount Pictures*, 334 U.S. 131, 163 (1948).

715. Several components of Epic's proposed relief go further than is needed to address the allegedly anticompetitive conduct of which Epic complains.

716. For example, Epic demands that Apple be enjoined for three years "from enforcing contractual provisions, guidelines or policies, or imposing technical restrictions, that restrict, prohibit, impede or deter distribution of iOS app stores through the App Store." Dkt. 276-1, Appendix A at 5. In other words, not only would Apple be *required* to distribute its competitors' app stores through the App Store, it also would be *prohibited* from screening or curating those apps *at all*. An app store could openly market itself as containing illegal or inappropriate content, or could contain code that threatens the security or privacy of users and/or their devices, yet Apple would have no right under Epic's demanded relief to stop the distribution of that rival app store through the App Store. This relief amounts to nothing more than a demand that Apple affirmatively assist Epic in its efforts to succeed as a competitor, and that Apple handicap itself by removing the screening features of the App Store that make it desirable to customers in the first place.

717. As another example, Epic demands that Apple be enjoined "from taking any retaliatory actions against Epic or any of its affiliates in connection with" Project Liberty or the lawsuit. Dkt. 276-1, Appendix A at 7. This relief would require Apple to continue to deal with a competitor who has evinced a willful disregard for its contractual relationship with Apple. Even if Apple were required to license out its intellectual property, it should not be compelled to continue to do business with a company that refuses to honor its contracts with Apple. This request for relief is nothing more than punishment for Apple and a windfall for Epic. Even if Epic is correct that Apple must allow "sideloading" of alternative app stores, there is no basis for its demand that Apple be compelled to distribute EGS through the App Store, particularly when Epic has given Apple good reason to doubt that

it will abide by the terms of the DPLA, including the App Store Review Guidelines. *See Technical Res. Servs., Inc. v. Dornier Med. Sys., Inc.*, 134 F.3d 1458, 1467 (11th Cir. 1998) (identifying "the past litigiousness of, and prior disputes with," the plaintiff as a valid procompetitive justification for a course of dealing).

718. *Third*, Epic's proposed equitable relief is overbroad in that it extends beyond Epic, and purports to bind Apple with respect to *all* developers.

719. "Where relief can be structured on an individual basis, it must be narrowly tailored to remedy the specific harm shown." *Bresgal v. Brock*, 843 F.2d 1163, 1170 (9th Cir. 1987); *see also Zepeda v. U.S. I.N.S.*, 753 F.2d 719, 727 (9th Cir. 1983) ("[T]he injunction must be limited to apply only to the individual plaintiffs unless the district judge certifies a class of plaintiffs.").

720. Injunctive relief may be "no more burdensome to the defendant than necessary to provide complete relief *to the plaintiffs*." *Madsen v. Women's Health Ctr., Inc.*, 512 U.S. 753, 765 (1994) (quotation marks omitted) (emphasis added); *see also Easyriders Freedom F.I.G.H.T. v. Hannigan*, 92 F.3d 1486, 1501 (9th Cir. 1996) ("[I]njunctive relief generally should be limited to apply only to named plaintiffs where there is no class certification."). Were it otherwise, "[w]henever any individual plaintiff suffered injury as the result of official action, he could merely file an individual suit as a pseudo-private attorney general and enjoin the [defendant] in all cases. But such broad authority has never been granted to individual plaintiffs absent certification of a class." *Zepeda v. U.S. I.N.S.*, 753 F.2d 719, 728 n.1 (9th Cir. 1983).

721. Epic opted out of the pending class action brought by developers challenging the same conduct and instead elected to pursue this case individually. It was entitled to pursue this case individually, but having done so, it cannot assume the mantle of a "pseudo-private attorney general" and purport to vindicate the interests of all developers. Even if Epic is correct that specific contractual provisions (for example) could be enjoined, that relief would extend only to the contract between Apple and Epic. Epic has no standing to seek relief on behalf of any other developers, much less all of them. Equitable relief must be "no more burdensome to the defendant than necessary to provide complete relief to the plaintiffs." *Madsen v. Women's Health Ctr., Inc.*, 512 U.S. 753, 765 (1994) (quotation marks omitted). Any injunctive relief to which Epic might be entitled thus must be limited to apply only to Epic.

722. To the extent Epic relies on cases brought by the government to support an expansive view of the appropriate scope of injunctive relief in a case brought by a private party, that analogy is inapt. "[A] suit instituted by the government for the benefit of society as a whole" is fundamentally different to "a claim brought by a private litigant." *Alberta Gas Chemicals Ltd. v. E.I. Du Pont De nemours & Co.*, 826 F.2d 1235, 1239 (3d Cir. 1987); *see also United States v. Borden Co.*, 347 U.S. 514, 518–19 (1954) ("[T]he scheme of the statute is sharply to distinguish between Government suits, either criminal or civil, and private suits for injunctive relief or for treble damages."). "The Government seeks its injunctive remedies on behalf of the general public; the private plaintiff, though his remedy is made available pursuant to public policy as determined by Congress, may be expected

to exercise it only when his personal interest will be served." *Borden Co.*, 347 U.S. at 518. The limits on injunctions sought by private parties and the government are therefore not coextensive. *Howard Hess Dental Labs. Inc. v. Dentsply Int'l, Inc.*, 602 F.3d 237, 249 (3d Cir. 2010); *see also Int'l Tel. & Tel. Corp. v. Gen. Tel. & Elecs. Corp.*, 518 F.2d 913, 927 (9th Cir. 1975) (observing in private-plaintiff cases that the public "enjoy[s] none of the safeguards of the public-interest standards and expertness which presumably guide the government when it is a plaintiff"), *disapproved on other grounds by Cal. v. Am. Stores Co.*, 495 U.S. 271 (1990).

723. *Fourth*, Epic's proposed equitable relief is overbroad in that it has no geographical limitations.

724. "Although there is no bar against nationwide relief in federal district court or circuit court, such broad relief must be *necessary* to give prevailing parties the relief to which they are entitled." *California v. Azar*, 911 F.3d 558, 582 (9th Cir. 2018) (quotation marks omitted) (emphasis in original). "This rule applies with special force where there is no class certification." *Id.*

725. As set forth above, *see supra* § II.C (¶¶ 152–59), the relevant market at issue in this case is limited to the United States from the consumer side. For that reason alone, the relief cannot require Apple to make changes to the operation of the App Store storefront in other countries.

726. Moreover, the FTAIA limits the geographic reach of any injunction because it limits the reach of any claim arising under Sections 1 or 2 of the Sherman Act. *See* 15 U.S.C. § 6a. The Ninth Circuit has accordingly vacated international injunctions where the district court gave insufficient attention to their intrusion on foreign commerce. *See Calnetics Corp. v. Volkswagen of Am., Inc.*, 532 F.2d 674, 693 (9th Cir. 1976); *see also United States v. Gen. Elec. Co.*, 115 F. Supp. 835, 842 (D.N.J. 1953) (tailoring injunction to avoid subjecting defendant to conflicting obligations under foreign and domestic law).

727. Just as the FTAIA limits the scope of liability in this case, *see also supra* § III.A.iv (¶¶ 187–96), it also limits the scope of the available relief.

728. *Fifth*, Epic's requested relief is too vague.

729. An order granting an injunction must "state the reasons why it issued," "state its terms specifically," and "describe in reasonable detail—and not by referring to the complaint or other document—the act or acts restrained or required." Federal Rule of Civil Procedure 65(d)(1); *see also United States v. Holtzman*, 762 F.2d 720, 726 (9th Cir. 1985) (an injunction must be "reasonably clear so that ordinary persons will know precisely what action is proscribed").

730. "[Rule 65] was designed to prevent uncertainty and confusion on the part of those faced with injunctive orders, and to avoid the possible founding of a contempt citation on a decree too vague to be understood." *Columbia Pictures Indus., Inc. v. Fung*, 710 F.3d 1020, 1047 (9th Cir. 2013) (quotation marks omitted); *see also Reno Air Racing Ass'n, Inc. v. McCord*, 452 F.3d 1126, 1134 (9th Cir. 2006) ("The benchmark for clarity and fair notice is not

lawyers and judges, who are schooled in the nuances of [the] law," but instead the "lay person, who is the target of the injunction").

731. Several components of Epic's requested relief fail to provide sufficient clarity to Apple to understand what is prohibited.

732. Most glaring is the "anti-circumvention" request, which would "enjoin Apple from circumventing this Order by taking steps the violate the purpose, if not the terms, of this Order, including by imposing disincentives or providing incentives that are designed to, and have the effect of, making real competition in the iOS App Distribution Market and/or the In-App Payment Processing Market impracticable." Dkt. 276-1, Appendix A at 7. If Epic believes there are ways Apple could "circumvent[]" the requested relief without actually violating it, it should spell those limitations out in the relief so that Apple can understand what is permitted. It would be decidedly inequitable if Apple were to make substantial changes to its business model in response to the relief, only to be haled back into Court by Epic on the theory that it has violated the "purpose" of the ordered relief.

733. More generally, this Court is not in a position to oversee Apple's business operations on a going-forward basis. Any relief entered in this case must be complete on the day the judgment is rendered and allow both parties to conform their conduct accordingly, with no ongoing judicial involvement. Epic's proposed relief fails that standard.

D. State-Law Remedies (Epic Counts 7–10)[55]

734. The Cartwright Act provides that "[a]ny person who is injured in his or her business or property by reason of anything forbidden or declared unlawful by this chapter, may sue therefor" to obtain "preliminary or permanent injunctive relief when and under the same conditions and principles as injunctive relief is granted by courts generally under the laws of this state and the rules governing these proceedings." Cal. Bus. & Prof. Code § 16750(a).

735. The UCL provides that "[a]ny person who engages, has engaged, or proposes to engage in unfair competition may be enjoined in any court of competent jurisdiction. The court may make such orders or judgments, including the appointment of a receiver, as may be necessary to prevent the use or employment by any person of any practice which constitutes unfair competition, as defined in this chapter, or as may be necessary to restore to any person in interest any money or property, real or personal, which may have been acquired by means of such unfair competition." Cal. Bus. & Prof. Code § 17203.

736. The UCL provides for injunctive relief "as may be necessary to prevent the use or employment by any person of any practice which constitutes unfair competition." Cal. Bus. & Prof. Code § 17203. "[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 (2009). A private party seeking injunctive relief under the UCL may

[55] State-law remedies are addressed in §§ 18.3–18.4.1, pages 150–54 of the Joint Elements Submission.

request "public injunctive relief," *McGill v. Citibank, N.A.*, 2 Cal. 5th 945, 954 (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 (citations, alterations, and quotation marks omitted).

737. "It has been a fundamental principle for well over a century that state law cannot expand or limit a federal court's equitable authority." *Sonner v. Premier Nutrition Corp.*, 971 F.3d 834, 841 (9th Cir. 2020). Thus, "a federal court must apply traditional equitable principles before awarding" equitable relief under state law. *Id.*; *see also Roper v. Big Heart Pet Brands, Inc.*, No. 19-CV-406, 2020 WL 7769819, at *9 (E.D. Cal. Dec. 30, 2020) (applying *Sonner* to claim for injunctive relief).

738. Any equitable relief issued under state law must therefore comport with the principles and limitations outlined above with respect to the Sherman Act claims. *See supra* § V.B.iii (¶¶ 662–734).

739. "[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." *Healy v. Beer Inst., Inc.*, 491 U.S. 324, 336 (1989) (alteration and quotation marks omitted).

740. Any equitable relief issued under state law must therefore be limited to California. Otherwise, state law would reach conduct taking place wholly outside the State of California, in violation of the Commerce Clause.

VI. APPLE'S CLAIMS

A. Breach of Contract (Apple Count I)

741. Under California law, "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 (2011); *accord Reichert v. Gen. Ins. Co. of Am.*, 68 Cal. 2d 822, 830 (1968); CACI No. 303 (2020).

742. "A contract is an agreement to do or not to do a certain thing." Cal. Civ. Code § 1549. To prove the existence of a contract, a plaintiff must show (1) the parties were "capable of contracting" (i.e., they were not "minors, persons of unsound mind, and persons deprived of civil rights"), (2) each party freely communicated its assent to the terms of the contract, (3) the objects to which the parties agreed were lawful when the contract was made, and (4) the contract provided "sufficient cause or consideration." Cal. Civ. Code §§ 1550, 1556, 1565, 1595, 1596, 1605; *see also Robinson v. Magee*, 9 Cal. 81, 83 (1858) ("A contract is a voluntary and lawful agreement, by competent parties, for a good consideration, to do or not to do a specified thing.").

743. To establish that a contract is lawful, the plaintiff must show only that at least one objective of the contract is lawful. *Koenig v. Warner Unified Sch. Dist.*, 41 Cal. App. 5th 43, 55 (2019). "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; *see also Fair v. Bakhtiari*, 195 Cal. App. 4th 1135, 1157 (2011) ("Civil Code section 1599 codifies the common law doctrine of severability of contracts.").

744. The DPLA constitutes a lawful contract, particularly as to those provisions breached by Epic.

745. To prove that it performed its obligations under the contract, a plaintiff must show that "there has been no willful departure from the terms of the contract [by the plaintiff], and no omission of any of its essential parts, and that the [plaintiff] has in good faith performed all of its substantive terms." *Connell v. Higgins*, 170 Cal. 541, 556 (1915); CACI No. 312 (2020); *accord Posner v. Grunwald-Marx, Inc.*, 56 Cal. 2d 169, 186–87 (1961); *Kossler v. Palm Springs Devs., Ltd.*, 101 Cal. App. 3d 88, 101 (1980).

746. Breach is an "unjustified or unexcused[] failure to perform a contract[ual]" obligation. CACI No. 303 (2020), Sources and Authority (citing 1 Witkin, Summary 10th Contracts § 847 (2005)).

747. Epic breached the DPLA in two broad respects. *First*, Epic breached those provisions that require developers not to "hide, misrepresent or obscure any features, content, services or functionality" in its apps, FOF ¶ 107, or "provide, unlock or enable additional features or functionality" through any mechanisms outside of the App Store, by implementing the "hotfix" into the iOS version of *Fortnite*, FOF ¶ 106.4. *Second*, Epic breached its obligation to pay Apple "a commission equal to thirty percent (30%) of all prices payable by each end-user" for "sales of Licensed Applications [including any content, functionality, extensions, stickers, or services offered in the software application] to End-Users," by not paying Apple its 30% commission on transactions executed through Epic Direct Payment. FOF ¶ 109.1.

748. 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 (2005); CACI No. 303 (2020).

749. Apple has been harmed by Epic's breach by being deprived of its contractual 30% commission on digital transactions executed through Epic Direct Payment.

750. Epic has stipulated to all elements of Apple's breach of contract claim. Accordingly, unless Epic can prove one or more of its affirmative defenses, Epic is liable for breach of contract.[56]

[56] Apple represents that the parties are currently negotiating a stipulation and expect that it will be filed on April 9, 2021. If Epic ultimately does not stipulate to the breach-of-contract claim, Apple reserves the right to supplement these Proposed Conclusions of Law.

B. Breach of Implied Covenant of Good Faith and Fair Dealing (Apple Count II)

751. "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 v. Sharp Healthcare*, 183 Cal. App. 4th 1350, 1369 (2010) (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 (2013) (quoting *Carma Developers (Cal.), Inc. v. Marathon Dev. Cal., Inc.*, 2 Cal. 4th 342, 373 (1992)); CACI No. 325 (2020).

752. "In California, the factual elements necessary to establish a breach of the covenant of good faith and fair dealing are: (1) the parties entered into a contract; (2) the plaintiff fulfilled his obligations under the contract; (3) any conditions precedent to the defendant's performance occurred; (4) the defendant unfairly interfered with the plaintiff's rights to receive the benefits of the contract; and (5) the plaintiff was harmed by the defendant's conduct." *Rosenfeld v. JPMorgan Chase Bank, N.A.*, 732 F. Supp. 2d 952, 968 (N.D. Cal. 2010) (citing CACI No. 325 (2020)).

753. Because Epic has stipulated to its breach of contract, there is no need to separately analyze its liability for breach of the covenant of good faith and fair dealing.[57]

C. Quasi-Contract / Unjust Enrichment (Apple Count III)[58]

754. Even if the DPLA were unenforceable, Epic would still be required to compensate Apple for Epic's ongoing use of Apple's intellectual property, including that covering iOS, the App Store, Apple's APIs, and SDK, as well as for access to Apple's user base. Apple therefore is entitled to recovery on its Quasi Contract / Unjust Enrichment Claim, based on all the benefits that Epic took by diverting to itself commissions that belonged to Apple as compensation for numerous services provided to Epic by Apple.

755. Under California law, "unjust enrichment is an action in quasi-contract," *Paracor Fin., Inc. v. Gen. Elec. Capital Corp.*, 96 F.3d 1151, 1167 (9th Cir. 1996), under which a "restitutionary obligation" may arise even absent "a privity of relationship between the parties," *Hartford Cas. Ins. Co. v. J.R. Mktg., L.L.C.*, 61 Cal. 4th 988, 998 (2015). A quasi-contract/unjust-enrichment claim may thus be "plead[ed] in the alternative" to a breach of contract claim. *Verde Media Corp. v. Levi*, No. 14-CV-891-YGR, 2015 WL 374934, at *8 (N.D. Cal. Jan. 28, 2015) ("[P]laintiff may plead in the alternative and 'assert claims based on both the existence and the absence of a binding agreement between the parties.'");

[57] If Epic ultimately does not stipulate to the breach-of-contract claim, Apple reserves the right to supplement these Proposed Conclusions of Law.

[58] Quasi-contract and unjust enrichment are addressed in §§ 14–14.2, pages 110–12 of the Joint Elements Submission.

Hawthorne v. Umpqua Bank, No. 11-CV-6700-YGR, 2012 WL 1458194, at *3 (N.D. Cal. Apr. 26, 2012) (same).

756. "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 (2009). Thus, if Epic were to succeed in proving one of its affirmative defenses to Apple's breach-of-contract claim, Epic still would have to answer in quasi-contract/unjust enrichment.

757. Under California law, "[t]he elements for a claim of unjust enrichment are 'receipt of a benefit and unjust retention of the benefit at the expense of another.'" *Prakashpalan v. Engstrom, Lipscomb & Lack*, 223 Cal. App. 4th 1105, 1132 (2014) (quotation marks omitted). "The theory of unjust enrichment requires one who acquires a benefit which may not justly be retained, to return either the thing or its equivalent to the aggrieved party so as not to be unjustly enriched.'" *Id.* (quotation marks omitted)

758. To prove the first element of a quasi-contract/unjust enrichment claim, a plaintiff must demonstrate the defendant's "receipt of a benefit." *Lectrodryer v. SeoulBank*, 77 Cal. App. 4th 723, 726 (2000). "The term 'benefit' connotes *any* type of advantage." *Hirsch v. Bank of Am.*, 107 Cal. App. 4th 708, 722 (2003) (emphasis in original). "Thus, a benefit is conferred not only when one adds to the property of another, but also when one saves the other from expense or loss." *Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (Cal. 1996).

759. "For a benefit to be conferred, it is not essential that money be paid directly to the recipient by the party seeking restitution." *County of Solano v. Vallejo Redevelopment Agency*, 75 Cal. App. 4th 1262, 1278 (1999) (quotation marks omitted); *see also Hirsch v. Bank of Am.*, 107 Cal. App. 4th 708, 722 (2003) (valid claim for unjust enrichment stated where banks "unjustified[ly]" collected and retained excessive fees passed through to them by third-party title companies at the expense of plaintiffs, "who absorbed the overage").

760. Epic received a benefit. By using Epic direct payment to circumvent paying Apple its commissions, Epic received and retained the benefits of access to iOS, the App Store, Apple's APIs and SDK, other intellectual property, and Apple's user base. *See Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (1996) ("The term 'benefit' denotes any form of advantage."). And to this day, Epic has not given Apple "its equivalent" in return: namely the commission. *Prakashpalan v. Engstrom, Lipscomb & Lack*, 223 Cal. App. 4th 1105, 1132 (2014) (quotation marks omitted). Thus, Epic "enjoyed the benefits of the [agreement] without upholding its end of the bargain": namely, paying the commission. *Alkayali v. Hoed*, No. 18-CV-777, 2018 WL 3425980, at *7 (S.D. Cal. July 16, 2018).

761. The second element of unjust enrichment requires that "the circumstances of [a benefit's] receipt or retention are such that, as between the two persons, it is unjust for him to retain it." *Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (1996) (quotation marks omitted). But "[t]he fact that one person benefits another is not, by itself, sufficient to require restitution" for an unjust enrichment claim. *First Nationwide Sav. v. Perry*, 11 Cal. App. 4th 1657, 1663 (1992). "Determining whether it is unjust for a person to retain a benefit may involve

policy considerations." *Id.* For example, "restitution is commonly denied against an innocent transferee or beneficiary, if he has changed his position after the transaction and it is impossible or impractical to restore him to his original position." *Id.* (quotation marks omitted). "By contrast, a transferee with knowledge of the circumstances giving rise to an unjust enrichment claim may be obligated to make restitution." *Id.* And "[w]hile the paradigm case of unjust enrichment is one in which the benefit on one side of the transaction corresponds to an observable loss on the other, the consecrated formula 'at the expense of another' can also mean 'in violation of the other's legally protected rights,' without the need to show that the claimant has suffered a loss." *Alkayali v. Hoed*, No. 18-CV-777, 2018 WL 3425980, at *6 (S.D. Cal. July 16, 2018) (some quotation marks omitted) (quoting Restatement (Third) of Restitution and Unjust Enrichment § 1 cmt. a (2011)).

762. It would be unjust for Epic to retain the benefits of access to iOS, the App Store, Apple's APIs and SDKs, other intellectual property, and Apple's user base—without paying Apple a dime. As set forth above, *see supra* § III.B.ii.d (¶ 315), Apple has intellectual property interests in many components of iOS, and is entitled to set conditions for the licensing and use of its intellectual property.

763. Epic is not an "innocent transferee or beneficiary" of all of these benefits. *First Nationwide Sav. v. Perry*, 11 Cal. App. 4th 1657, 1663 (1992) (quotation marks omitted). Months before the "hotfix" that permitted Epic to bypass IAP was activated, Epic had begun to plan and coordinate its calculated preemptive strike against Apple. FOF ¶¶ 270-272. This effort, dubbed "Project Liberty," was as much about Epic's revenues and media image as it was about the antitrust laws [redacted] Epic thus sought to redefine *Fortnite* as a platform for other developers to modify, with Epic acting as the middleman and taking its share of the profit. FOF ¶ 269. But to do that, Epic had to find a way around the commission rate for use of iOS and Apple's intellectual property. FOF ¶ 269. Its solution was Project Liberty and the accompanying "hotfix." FOF ¶ 270, 274.3.

764. Epic had complete "knowledge of the circumstances" here. *First Nationwide Sav. v. Perry*, 11 Cal. App. 4th 1657, 1663 (1992). The crux of Project Liberty was the "hotfix," a surreptitious component of a regular update of *Fortnite* that would allow Epic to later activate a change in the in-app transaction processing for *Fortnite* on iOS to bypass IAP and the 30% commission. FOF ¶ 274.3. Epic smuggled this code into *Fortnite* without Apple's knowledge or consent, and intentionally appropriated the commission that should have been remitted to Apple as compensation for use of its intellectual property. FOF ¶¶ 299-300.

765. To be clear, Epic could have litigated this dispute without incurring liability for unjust enrichment. It could have continued as a class member in the ongoing *Cameron* litigation, or it could have opted out of the class action and brought its own lawsuit. Dkt. 118 at 30. Instead, Epic chose to engage in intentional misconduct and breach of the DPLA. *Id.* at 7–8. That is a paradigmatic example of an unjust receipt of a benefit.

766. Therefore, Apple is entitled to restitution based on all the benefits that Epic took by diverting to itself commissions that rightfully belonged to Apple as compensation for the app distribution and other services provided to Epic by Apple.

D. Indemnification (Apple Count VII)[59]

767. Apple is contractually entitled to indemnification from Epic, including recovery of attorneys' fees and costs of defending this litigation and pursuing its Counterclaims.

768. 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 (1993); *see also Herman Christensen & Sons, Inc. v. Paris Plastering Co.*, 61 Cal. App. 3d 237, 245 (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 (2016).

769. The DPLA between Apple and Epic provides, at section 10:

> To the extent permitted by applicable law, You agree to indemnify and hold harmless . . . 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 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.
>
> FOF ¶ 110.

770. Because Epic's claims arise from and relate to, *inter alia*, Epic's breaches of the DPLA and its use of the Apple Software or services, Apple has the right to indemnification here. The DPLA provides that indemnification will be triggered by "[Epic's] breach of any certification, covenant, obligation, representation or warranty in this Agreement." FOF ¶ 110. That clause plainly contemplates that Epic will indemnify Apple for claims arising out of Epic's "breach" of the "obligation[s]" and "covenant[s]" in the contract. *Id.*

771. It is undisputed that Epic breached the DPLA, Schedule 2, ¶ 3.4(a), by failing to pay Apple agreed-to commissions on its in-app sales through *Fortnite*, and Apple brought a series of Counterclaims in response. Under the express terms of the DPLA, therefore, Apple is

[59] Indemnification is addressed in § 15, page 113 of the Joint Elements Submission.

entitled to indemnification here for the recovery of attorneys' fees and costs of pursuing its Counterclaims.

772. Not only is Apple entitled to indemnification for pursuing its Counterclaims, it is also entitled to indemnification for the costs of defending this litigation. Epic's lawsuit asserts claims "arising from or related to" its breaches of its certifications, covenants, obligations, representations, and warranties under the DPLA. FOF ¶ 110. Throughout this litigation, Epic has challenged the same "contractual provisions" and "contractual restraints," *see, e.g.*, Dkt. 1 ¶¶ 228, 229, 262, that it breached by "covertly introduc[ing] a 'hotfix' into the Fortnite version 13.40 update," *see* Dkt. 118 at 6, "clandestinely add[ing] features in violation of the guidelines and its agreements with Apple," *id.* at 7 n.7.

773. There is no dispute that Epic's conduct violated the DPLA. *See supra* V.A–V.B (¶¶ 742–54). Epic's breach of these contractual obligations is related to Epic's antitrust claims because, among other things, Epic contends that its breach was justified because the contracts themselves are allegedly illegal and unenforceable. *See* Dkt. 106 at 1 ("Epic denies that its refusal to abide by Apple's anti-competitive scheme was in any way wrongful" because "the agreements . . . are illegal and unenforceable."); *id.* at 17 ("Apple's Contracts Are Illegal and Unenforceable"). Epic's entire theory of the case is related to its breach of those agreements.

774. Epic could have litigated its antitrust claims without breaching its contract with Apple. Epic's deliberate decision to breach first and then bring suit—all part of its coordinated [redacted] marketing strategy—makes all of Apple's costs of defense covered by the contractual indemnification provision.

775. In addition, Epic's lawsuit "aris[es] from and relat[e]s" to Epic's "use of . . . Apple's Software and services." FOF ¶ 110. The indemnification clause's language—"any claim arising from or related to"—is to be interpreted broadly. *See Rice v. Downs*, 248 Cal. App. 4th 175, 186 (2016) ("A 'broad' clause includes those using language such as 'any claim arising from or related to this agreement.'" (emphases omitted)); *see also Howard v. Goldbloom*, 30 Cal. App. 5th 659, 663 (2018) (same). Epic's entire lawsuit is an attempt to change—in fact, dictate—the terms of its "use of . . . Apple's software," such as its Metal, Apple's Software Development Kit (SDK), and other software that Epic has admitted to using and has admitted is critical for the development of apps on iOS. Moreover, Epic's claims are about its use of Apple's services: "distribution services," Dkt. 1 ¶ 49, and so-called "in-app payment processing services," *id.* ¶ 16. In short, the indemnification clause plainly contemplates that Epic will indemnify Apple for claims arising out of Epic's use of Apple's Software (such as Metal, SDKs, etc.) and Apple's distribution services, including IAP.

776. Apple, therefore, is entitled to indemnification for both the costs of defending this litigation *and* pursuing its Counterclaims, under the express language of the DPLA.

E. Epic's Affirmative Defenses[60]

i. Illegality (Apple Counts I, II, and VII)[61]

777. Epic has raised the defense that Apple's counterclaims are barred because they are based on contracts that are illegal and unenforceable under the antitrust laws. *See* Dkt. 106 at 17. This defense may be raised under both federal law and state law.

b. Illegality Under Federal Law

778. "[W]hile the effect of illegality under a federal statute is a matter of federal law, . . . the federal courts should not be quick to create a policy of nonenforcement of contracts beyond that which is clearly the requirement of the Sherman Act." *Kelly v. Kosuga*, 358 U.S. 516, 519 (1959). But "the illegality defense should be entertained in those circumstances where its rejection would be to enforce conduct that the antitrust laws forbid." *Kaiser Steel Corp. v. Mullins*, 455 U.S. 72, 81–82 (1982).

779. Courts decline to enforce a contract as in violation of the Sherman Act if "the judgment of the Court would itself be enforcing the precise conduct made unlawful by [the antitrust laws]." *Kelly*, 358 U.S. at 520; *see also El Salto, S. A. v. PSG Co.*, 444 F.2d 477, 482 (9th Cir. 1971) ("The Supreme Court has ruled that a Sherman Act violation is not an affirmative defense to a contract suit, even where the violation is inherent in the contract sued upon, so long as judicial enforcement of the contract would not be enforcing the precise conduct made unlawful by the Act."); *Kaiser Trading Co. v. Associated Metals & Minerals Corp.*, 321 F. Supp. 923, 930 (N.D. Cal. 1970) ("Although the courts will not enforce a contract that is an illegal restraint on trade, it is the contract being sued upon which must give rise to the illegal or anticompetitive effect; it is not enough that the plaintiff's general activities are anticompetitive."); *Bassidji v. Goe*, 413 F.3d 928, 936 (9th Cir. 2005) ("Both federal law and California law begin from the core proposition that whatever flexibility may otherwise exist with regard to the enforcement of 'illegal' contracts, courts will not order a party to a contract to perform an act that is in direct violation of a positive law directive, even if that party has agreed, for consideration, to perform that act.").

780. A "plea of illegality based on violation of the Sherman Act" is disfavored, and if "a lawful sale for a fair consideration constitutes an intelligible economic transaction in itself," it is appropriate to enforce the contract "even though [the transaction] furnished the occasion for a restrictive agreement." *Kelly v. Kosuga*, 358 U.S. 516, 518, 521 (1959); *see also Electroglas, Inc. v. Dynatex Corp.*, 473 F. Supp. 1167, 1170 (N.D. Cal. 1979) ("Federal cases hold that the purchaser cannot avoid paying for goods received under a contract by claiming an antitrust defense.").

---

[60] Apple has addressed here only those affirmative defenses of Epic set forth in the Joint Elements Submission. Apple reserves the right to brief and argue any additional affirmative defenses Epic intends to assert at trial.

[61] Illegality is addressed in §§ 16.1–16.1.2, pages 115–18 of the Joint Elements Submission.

781. Epic cannot avoid its obligations under the contract to remit a 30% commission to Apple for sales executed during the period in which the "hotfix" was in place.

782. *First*, Epic's antitrust claims fail on the merits for all of the reasons described above, *see supra* § III, and thus there is nothing illegal about the contract restrictions it violated as part of Project Liberty.

783. *Second*, Apple's commission "constitutes an intelligible economic transaction in itself." *Kelly v. Kosuga*, 358 U.S. 516, 521 (1959). "[I]t can hardly be said to enforce a violation of the [Sherman] Act to give legal effect to a completed sale of [goods] at a fair price." *Id.* Whatever prospective relief Epic may be entitled to in terms of its obligations under the DPLA, that does not justify its refusal to pay Apple *anything* for its use of iOS and its intellectual property for those transactions executed while the "hotfix" was in place. There is no serious question that the 30% commission Epic is obligated to pay Apple represents a "fair price," as it is the same base commission rate charged on virtually every other game app platform except Epic's. FOF ¶¶ 249.18, 472, 568.

784. Epic could have adhered to its contract and sought a declaratory judgment—instead, it elected to willingly violate the DPLA and refuse to pay the price agreed upon for Apple's services and property. The Supreme Court has made clear that such a course of conduct does not absolve a party of its obligation to pay for services and goods already rendered or delivered.

785. *Third*, enforcement of the contract here would not "enforce conduct that the antitrust laws forbid." *Kaiser Steel Corp. v. Mullins*, 455 U.S. 72, 81 (1982). The antitrust laws do not forbid two parties from contracting for the compensated licensing of intellectual property. Even under Epic's theory that the IAP requirements of the DPLA are anticompetitive, Epic *also* failed to remit to Apple a 30% commission for digital transactions effected on the iOS *Fortnite* app. Epic committed (at least) two separate breaches of contract: one for bypassing IAP, and another for not remitting the commission to Apple. Indeed, the commission is charged as "consideration for [Apple's] services as [the developer's] agent," explained elsewhere to mean that Apple acts as the "agent for the *marketing and delivery*" of the developers' apps. FOF ¶ 109. Epic's affirmative defense of illegality under federal law, to the extent it is viable at all, would reach only the first breach and not the second.

786. This delineation among different provisions of the contract for purposes of evaluating illegality comports with the law of severability. 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 (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 (2020) (quotation marks omitted); *see also* Cal. Civ. Code § 1670.5.

787. Thus, as under the federal cases regarding illegality, the *lawful* provisions of a contract may (and indeed must) be enforced even if some provisions of a contract have been held to be illegal or unconscionable. Regardless of the disposition of Epic's Sherman Act

claims, the lawful portions of the DPLA—including the 30% commission that Epic must pay for digital in-app transactions—is unchallenged by Epic and unquestionably lawful. There is no impediment in the Sherman Act to enforcing that and the other provisions of the DPLA.

c. Illegality Under State Law

788. State law regarding illegality also does not provide a defense for Epic.

789. Under California law, "[t]he object of a contract must be lawful when the contract is made." Cal. Civ. Code § 1596. Among other possibilities, a contract is unlawful if it is (1) "[c]ontrary to an express provision of law," (2) "[c]ontrary to the policy of express law, though not expressly prohibited," or (3) "[o]therwise contrary to good morals." Cal. Civ. Code § 1667.

790. "A contract must receive such an interpretation as will make it lawful, operative, definite, reasonable, and capable of being carried into effect, if it can be done without violating the intention of the parties." Cal. Civ. Code § 1643.

791. "[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 (1965). California courts will not "fashion an equitable remedy" where doing so involves "enforcing the precise conduct made unlawful . . . in contravention of the legislative purpose." *Joe A. Freitas & Sons v. Food Packers, Processors & Warehousemen Local 865*, 164 Cal. App. 3d 1210, 1219 (1985).

792. "The rule that the courts will not lend their aid to the enforcement of an illegal agreement or one against public policy is fundamentally sound." *Tri-Q, Inc. v. Sta-Hi Corp.*, 63 Cal. 2d 199, 218 (1965) (quotation marks omitted). However, "[w]here, by applying the rule, the public cannot be protected because the transaction has been completed, where no serious moral turpitude is involved, where the defendant is the one guilty of the greatest moral fault, and where to apply the rule will be to permit the defendant to be unjustly enriched at the expense of the plaintiff, the rule should not be applied." *Id.* at 219 (quotation marks omitted).

793. "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 (2008) (quotation marks omitted).

794. "If one of the alternative acts required by an obligation is such as the law will not enforce, or becomes unlawful, or impossible of performance, the obligation is to be interpreted as though the other stood alone." Cal. Civ. Code § 1451.

795. "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) (quoting *Morey v. Paladini*, 187 Cal. 727, 734 (1922)).

796. Epic's defense of illegality under state law fails for many of the reasons its defense under federal law fails.

797. *First*, because Apple's conduct is not in violation of the Cartwright Act or the UCL, *see supra* § IV.A–C (¶¶ 583–633), the case presents no issue of illegality.

798. *Second*, the "transaction has been completed," there is no serious "moral turpitude" involved, except on the part of Epic, who is "guilty of the greatest moral fault" in its willful and calculated breach of the contract, and refusing to enforce the contract for completed transactions would unjustly enrich Epic. *Tri-Q, Inc. v. Sta-Hi Corp.*, 63 Cal. 2d 199, 219 (1965) (quotation marks omitted); *see also supra* § VI.C (¶¶ 755–67).

799. The "moral fault" of Epic here is apparent from its course of conduct leading up to the "hotfix." [redacted]. It retained [redacted] a public relations firm, leveraged resources from across the company, and devised a surreptitious way to sabotage the App Store and avoid paying Apple its lawfully agreed upon commission. FOF ¶ 272, 274, 282. Epic could have avoided all of this simply by bringing a declaratory judgment action, but instead it chose to willfully breach its contract and do everything in its power to paint Apple as the villain simply for adhering to the terms of the parties' agreement. FOF ¶ 304-307.

800. *Third*, the allegedly unlawful contractual restrictions (restrictions on distribution of iOS apps outside of the App Store and the requirement for using IAP) are severable from the 30% commission. *Marathon Entm't, Inc. v. Blasi*, 42 Cal. 4th 974, 996 (2008). Although those contractual limitations are core components of the DPLA, they are "collateral" to the right of Apple to collect a fee for licensing of its intellectual property. Thus, even if Epic is correct that the limitations it identifies are unlawful, it still must pay Apple the 30% commission rate that it willfully withheld.

ii. Void as Against Public Policy (Apple Counts I, II, and VII)[62]

801. Epic has raised the defense that Apple's counterclaims are barred because they are based on contracts that are void as against public policy. *See* Dkt. 106 at 17.

802. "That is not lawful which is . . . contrary to the policy of express law, though not expressly prohibited." Cal. Civ. Code § 1667(2); *see also Kelton v. Stravinski*, 138 Cal. App. 4th 941, 949 (2006) ("In general, a contract contrary to public policy will not be enforced."); *Altschul v. Sayble*, 83 Cal. App. 3d 153, 162 (1978) ("There is no requirement that a

[62] Public policy is addressed in § 16.2, page 119 of the Joint Elements Submission.

contract violate an express mandate of a statute before it may be declared void as contrary to public policy.").

803. "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 (1947). "California has a settled public policy in favor of open competition." *Kelton*, 138 Cal. App. 4th at 946; *see also Margolin v. Shemaria*, 85 Cal. App. 4th 891, 901 (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.").

804. A provision in a contract that obligates a party to the contract to violate the antitrust laws is void as against public policy. *See Foley v. Interactive Data Corp.*, 47 Cal. 3d 654, 713 n.12 (1988) (citing *Tameny v. Atlantic Richfield Co.*, 27 Cal. 2d 167 (1980)).

805. "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.

806. The defense of public policy does not apply here for the same reasons the defense of illegality does not. *See supra* § VI.E.i (¶¶ 778–801). Namely, the DPLA is not in violation of the antitrust laws and not in violation of public policy, and enforcement of the 30% commission rate would not require the Court to enforce any provision that Epic challenges as unlawful.

807. Moreover, any provisions challenged by Epic as unlawful are severable from the 30% commission that Epic is obliged to pay for Apple's services. The portion of the agreement providing for a commission does not even mention IAP. FOF ¶ 109.

iii. Unconscionability (Apple Counts I, II, and VII)[63]

808. Epic has raised the defense that Apple's counterclaims are barred because "the contracts on which Apple's counterclaims are based are unconscionable on the basis that they are contrary to the antitrust laws and unfair competition laws, as Epic respectfully requests this Court to determine on the basis of Epic's claims against Apple." Dkt. 106 at 17–18.

809. "[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 (1981).

810. "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,

[63] Unconscionability is addressed in § 16.3, pages 120–21 of the Joint Elements Submission.

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 (2010) (citations and some quotation marks omitted).

811. "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." Cal. Civ. Code § 1670.5(a); *Graham*, 28 Cal. 3d at 820 n.19 (citing Cal. Civ. Code § 1670.5) ("The judicially developed concept of unconscionability has recently become a part of our statutory law.").

812. "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 (2007) (internal quotation marks and citations omitted).

813. "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 (2000) (quotation marks and alterations omitted).

814. "The substantive element of the unconscionability analysis focuses on overly harsh or one-sided results," *Gatton*, 152 Cal. App. 4th at 586, or "whether a contractual provision reallocates risks in an objectively unreasonable or unexpected manner," *Lhotka*, 181 Cal. App. 4th at 821. Substantive unconscionability "traditionally involves contract terms that are so one-sided as to 'shock the conscience,' or that impose harsh or oppressive terms." *Wherry v. Award, Inc.*, 192 Cal. App. 4th 1242, 1248 (2011).

815. The DPLA is not unconscionable for the same reasons the defense of illegality does not apply. *See supra* § VI.E.i (¶¶ 778–801).

816. Moreover, there is nothing about the challenged provisions that "shock the conscience." These provisions are commonplace in the industry, and in fact can be found in the agreements of numerous other transaction platforms with which Epic does business. FOF ¶¶ 249.18, 472, 568. Apple has been using these same standard terms, in sum or substance, since 2008, FOF ¶ 48, and Epic has been operating under them since 2010, FOF ¶ 252. No other court has held such provisions to be substantively unconscionable, and there is no basis in law or fact for this Court to be the first.

817. Epic has waived any argument that the indemnification clause of the DPLA is substantively unconscionable. Epic asserted the defense of unconscionability solely on the basis that the DPLA is "contrary to the antitrust laws and unfair competition law." Dkt. 106 at 17. Epic made no mention of any other basis for unconscionability. Having failed to timely raise the defense of unconscionability with respect to the indemnification clause or timely sought to amend, Epic cannot pursue an unconscionability defense on that basis. *See John R. Sand & Gravel Co. v. United States*, 552 U.S. 130, 133 (2008) (explaining that an affirmative must be "raise[d] at the pleadings stage and . . . is subject to rules of forfeiture and waiver"); *Arizona v. California*, 530 U.S. 392, 410 (2000) ("[A]n affirmative defense [is] ordinarily lost if not timely raised.").

818. In any event, the indemnification provision of the DPLA is not substantively unconscionable. California courts routinely recognize that such clauses are enforceable. *See, e.g.*, *Marin Storage & Trucking, Inc. v. Benco Contracting & Eng'g, Inc.*, 89 Cal. App. 4th 1042, 1056 (2001). In the rare cases where a clause has been held unconscionable, the clause required indemnification by a contracting party for all damages arising out of the performance of the contract, even those caused by the counterparty and for which the contracting party would otherwise be entitled to damages. *See Lennar Homes of Cal., Inc. v. Stephens*, 232 Cal. App. 4th 673, 691–93 (2014). No such circumstances are alleged here.

VII. APPLE'S REMEDIES

A. Compensatory Damages (Apple Counts I–II)[64]

819. As compensation for Epic's breach of contract and its breach of the implied covenant of good faith and fair dealing, Apple is entitled to [redacted] in compensatory damages, plus 30% of any additional revenue taken in by Epic from iOS users using Epic's alternative payment function from November 1, 2020 through the date of judgment.

820. Under California law, "[f]or the breach of an obligation arising from contract, the measure of damages . . . is the amount which will compensate the party aggrieved for all the detriment proximately caused thereby, or which, in the ordinary course of things, would be likely to result therefrom." Cal. Civ. Code § 3300. Except where otherwise provided by law, "no person can recover a greater amount in damages for the breach of an obligation, than he could have gained by the full performance thereof on both sides." *Id.* § 3358. Compensatory damages in a breach-of-contract action therefore "seek to approximate the agreed-upon performance," and the "goal is to put the plaintiff in as good a position as he or she would have occupied if the defendant had not breached the contract." *Lewis Jorge Constr. Mgmt., Inc. v. Pomona Unified Sch. Dist.*, 34 Cal. 4th 960, 967 (2004) (quotation marks omitted); *see also Brandon & Tibbs v. George Kevorkian Accountancy Corp.*, 226 Cal. App. 3d 442, 455 (1990) ("The basic object of damages is compensation, and in the law of contract the theory is that the party injured by a breach should receive as nearly as possible the equivalent of the benefits of performance."). "[T]he nonbreaching party is entitled to recover only those damages, including lost future profits, which are 'proximately

[64] Compensatory damages are addressed in § 19.1, page 155 of the Joint Elements Submission.

caused' by the specific breach." *Postal Instant Press v. Sealy*, 43 Cal. App. 4th 1704, 1709 (1996).

821. "Contractual damages are of two types—general damages (sometimes called direct damages) and special damages (sometimes called consequential damages)." *Lewis Jorge Constr. Mgmt., Inc. v. Pomona Unified Sch. Dist.*, 34 Cal. 4th 960, 968 (2004); *see also Mission Beverage Co. v. Pabst Brewing Co., LLC*, 15 Cal. App. 5th 686, 710–11 (2017) (categorizing damages). "General damages" are those that "flow directly and necessarily from a breach of contract, or that are a natural result of a breach." *Lewis Jorge Constr.*, 34 Cal. 4th at 968. "[S]pecial damages are those losses that do not arise directly and inevitably from any similar breach of any similar agreement," but instead "are secondary or derivative losses arising from circumstances that are particular to the contract or the parties." *Id.*

822. But for Epic's breach of the DPLA, it would have paid Apple the contractually required 30% of all of the digital transactions executed by iOS users of *Fortnite*. Since Epic's surreptitious implementation of the "hotfix" and Epic direct payment up through October 2020, users of the iOS version of *Fortnite* have made in-app purchases through Epic direct payment totaling [redacted]. FOF ¶ 317. Apple is entitled to 30% of those transactions as compensation for Epic's admitted breach of contract, and Apple therefore is entitled to [redacted] in compensatory damages as of October 31, 2020, and 30% of all transactions executed through Epic's alternative payment system after that date.

B. Unjust Enrichment (Apple Count III)[65]

823. Even if the DPLA and the 30% commission memorialized therein were unenforceable under the defense of illegality, that would not exempt Epic from having to pay for its access to iOS, the App Store, Apple's APIs and SDK, other intellectual property, and Apple's user base. Apple is entitled to restitution for Epic's unjust enrichment for its use of Epic direct payment to circumvent having to pay Apple for use of Apple's facilities and intellectual property.

824. "Under the law of restitution, an individual may be required to make restitution if he is unjustly enriched at the expense of another." *Ghirardo v. Antonioli*, 14 Cal. 4th 39, 51 (1996); *see also First Nationwide Savings v. Perry*, 11 Cal. App. 4th 1657, 1662 (1992) (same). "[R]estitution may be awarded in lieu of breach of contract damages when the parties had an express contract, but it was procured by fraud or is unenforceable or ineffective for some reason." *McBride v. Bougthon*, 123 Cal. App. 4th 379, 388 (2004); *see also Hartford Casualty Ins. Co. v. J.R. Mktg., LLC*, 61 Cal. 4th 988, 998 (2015).

825. The "amount by which defendants were unjustly enriched" typically is "the net profit attributable to the underlying wrong." *Am. Master Lease LLC v. Idanta Partners, Ltd.*, 225 Cal. App. 4th 1451, 1491 (2014) (quotation marks omitted). "The amount of restitution to be made is sometimes described as the 'benefit' received by the defendant." *Id.* at 1487. Restitution may also be set at "the amount[] necessary to place the plaintiff in as good a

[65] Restitution and unjust enrichment are addressed in § 19.2, page 156 of the Joint Elements Submission.

position as he or she would have been had no contract been made. Consequently, an award limited to unjust enrichment is a relatively mechanical and undemanding calculation." *Hernandez v. Lopez*, 180 Cal. App. 4th 932, 938–39 (2009) (citation, alterations, and quotation marks omitted). The award may also include "compensation, reimbursement, indemnification, or reparation for benefits derived from, or for loss or injury caused to, another." *Dunkin v. Boskey*, 82 Cal. App. 4th 171, 198 (2000) (quotation marks omitted).

826. Even if Epic were entitled to the equitable relief it seeks, there is no question that through Epic direct payment, Epic used Apple's intellectual property and resources—iOS, the App Store, and all of the resources that go into the maintenance and operation of those facilities—to enrich itself *without* paying compensation to Apple. As set forth above, such unpaid-for enrichment gives rise to a claim for restitution, regardless of the viability of Epic's legal defenses to the enforcement of the contract.

827. The proper measure of damages here is 30% of Epic's revenue obtained through use of Epic Direct Pay for iOS users. That is the rate set forth in the DPLA, FOF ¶ 109 , and even if the DPLA is itself unenforceable, Epic agreed that Apple would retain 30% of revenue from all transactions, and that is therefore the amount Epic has been unjustly enriched by benefitting from and taking advantage Apple's resources without its authorization.

828. Moreover, the industry-standard base commission rate is 30%. FOF ¶ 472, 568. Thus, even if that rate were not memorialized in the DPLA, that is the fair-market rate for the services that Apple provides to developers (including Epic) through the App Store.

829. Accordingly, unjust enrichment provides an alternative basis for the award of $3,650,315.70 to Apple, plus 30% of any transactions executed through Epic's alternative payment system going forward, as compensation for Epic's unauthorized use of its facilities.

C. Declaratory Judgment (Apple Count VI)[66]

830. Apple is entitled to declaratory judgment that the DPLA and the License Agreement are valid and enforceable obligations.

831. "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).

832. The test for declaratory relief is "'whether the facts alleged, under all the circumstances, show that there is a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant' relief." *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 127 (2007) (quoting *Md. Cas. Co. v. Pacific Coal & Oil Co.*, 312 U.S.

[66] Declaratory judgment is addressed in §§ 18.1–18.1.2, 19.3, pages 128–30, 157 of the Joint Elements Submission.

270, 273 (1941)). Moreover, "the dispute [must] be definite and concrete, touching the legal relations of parties having adverse legal interests; [and must] be real and substantial and admi[t] of specific relief through a decree of a conclusive character, as distinguished from an opinion advising what the law would be upon a hypothetical state of facts." *Id.* (quotation marks omitted).

833. 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 (2007). This "substantial" discretion permits the Court to consider "equitable, prudential, and policy arguments" for or against the declaratory relief sought. *Id.*

834. 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).

835. 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). The district court must "balance concerns of judicial administration, comity, and fairness to the litigants." *Principal Life Ins. Co. v. Robinson*, 394 F.3d 665, 672 (9th Cir. 2005) (quotation marks omitted).

836. As evidenced by the fact that Epic has openly violated the terms of the DPLA and brought this suit, there plainly is a live controversy between the parties regarding the validity and enforceability of the DPLA, as well as the lawfulness of Apple's termination of Epic's DPLA and its License Agreement. The dispute is both "definite" and "concrete," and a decree that Apple has the right to exclude *Fortnite* from the App Store and terminate Epic's License Agreement would offer conclusive relief to Apple. *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 127 (2007).

837. As set forth above, Epic has admittedly breached the DPLA, and it had no justification for doing so. The terms of the DPLA are not in violation of the antitrust laws, and even if they were, that would not excuse Epic's intentional breach and unjust enrichment of itself at the expense of Apple.

838. Therefore:

A. The Developer Agreement and the DPLA are valid, lawful, and enforceable contracts;

B. Apple's termination of the Developer Agreement with Epic was valid, lawful, and enforceable;

C. Apple's termination of the DPLA with Epic for cause was valid, lawful, and enforceable;

D. Apple has the contractual right to terminate its Developer Agreement with any or all of Epic's wholly owned subsidiaries, affiliates, and/or other entities under Epic's control, including Epic International (collectively, "Epic Affiliates"), at any time and at Apple's sole discretion; and

E. 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.

Dkt. 276-1, Appendix A at 8–9.

D. Indemnification (Apple Count VII)[67]

839. An express indemnity clause "is enforced in accordance with the terms of the contracting parties' agreement." *Prince v. Pac. Gas & Elec. Co.*, 45 Cal. 4th 1151, 1158 (2009).

840. The indemnity clause within the DPLA provides for the recovery of attorneys' fees. The clause provides:

> To the extent permitted by applicable law, You [Epic] agree to indemnify, defend and hold harmless Apple, 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, expenses and costs, including without limitation attorneys' fees and court costs, (collectively "Losses") incurred by an Apple Indemnified Party and arising from or related to any of the following (but excluding for purposes of this Section, any Internal Use Application for macOS that does not use any Apple Services or Certificates): (i) Your breach of any certification, covenant, obligation, representation or warranty in this Agreement; (ii) any claims that Your Covered Product or metadata or the deployment, delivery, use or importation of Your Covered Product (whether alone or as an essential part of a combination) violate or infringe any third party intellectual property or proprietary rights, (iii) any Employee, Customer, Permitted Entity, or Permitted User claims about Your Covered Product, including, but not limited to, a breach of any of Your obligations under any end-user license that You include for Your Covered Product; (iv) Your use of the Apple Software, certificates or services (including, but not limited to, use of MDM, Configuration Profiles, and certificates), Your Covered Product, metadata, Deployment Devices, or Your development and deployment of any Covered Product; and/or (v) any MDM Customer claims about Your Compatible Products, as well as any claims that Your Compatible Products violate or infringe any third party intellectual property or proprietary rights.

[67] Indemnification is addressed in § 19.4, pages 158–59 of the Joint Elements Submission.

FOF ¶ 110.

841. The indemnity clause within the DPLA provides for reimbursement of attorneys' fees by Epic in litigation between Apple and Epic. A contract providing for indemnification for "expenses and attorney's fees suffered or incurred *on account of any breach of the aforesaid obligations and covenants, any other provision or covenant of this [contract]*" contemplates indemnification for attorneys' fees arising out of a breach of the contract. *Cont'l Heller Corp. v. Amtech Mech. Servs., Inc.*, 53 Cal. App. 4th 500, 509 (1997). The clause here provides that indemnification will be triggered by "[Epic's] breach of any certification, covenant, obligation, representation or warrant in this Agreement." FOF ¶ 110. The clause plainly contemplates that Epic will indemnify Apple for claims arising out of Epic's "breach" of the "obligation[s]" and "covenant[s]" in the contract, and therefore requires indemnification of Apple's attorneys' fees in this lawsuit. Although a "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 action on the contract*," *Alki Partners, LP v. DB Fund Servs., LLC*, 4 Cal. App. 5th 574, 600 (2016) (quotation marks omitted), the contract here includes such language.

842. As set forth above, *see supra* § VI.D (¶¶ 768–77), Apple is entitled to indemnification for the attorneys' fees and court costs incurred in defending this lawsuit. Because the amount to which Apple is entitled necessarily includes fees and costs incurred during trial and post-trial proceedings, it is appropriate to defer calculation of Apple's damages under this count until resolution of those proceedings.

843. Deferral of determination of the amount of attorneys' fees to be awarded comports with Federal Rule of Civil Procedure 54(d)(2), which sets forth the default procedure for claiming an award of attorneys' fees in federal court. The Court adopts that procedure for establishing the value of Apple's indemnification claim, and may ultimately refer the issue to a magistrate judge for resolution.