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### **The Antitrust Case Against Apple**

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\* Parts of this report are derived from a forthcoming paper at the Berkeley Technology Law Journal. See Shili Shao, *Antitrust in the Consumer Platform Economy: How Apple Has Abused Its Mobile Platform Dominance*, 36 BERKELEY TECH. L.J. (forthcoming 2021).

## INTRODUCTION

**Overview.** The App Store hosts over two million apps,<sup>1</sup> 20 million registered developers,<sup>2</sup> and nearly half of American smartphone users, who download eight billion apps<sup>3</sup> and generate over \$20 billion in sales each quarter.<sup>4</sup> As Apple describes, these apps have “ignited a cultural, social and economic phenomenon that changed how people work, play, meet, travel and so much more.”<sup>5</sup> Apple’s anticompetitive conduct, however, threatens to thwart competition in this vibrant market.

The Apple ecosystem’s dominant revenue share, lock-in effects, and consumer myopia give the iPhone maker monopoly power as a mobile platform: Apple holds 71% of the mobile platform market by revenue; iPhone users’ switching costs are 50 times higher than a 5% app price increase; and Apple has been able to raise iPhone prices by 33% without losing sales.<sup>6</sup>

Robust competition between platforms is particularly elusive in the mobile-app space. The current players, Apple and Android, have chosen to compete on different dimensions. Apple uniquely emphasizes privacy, security, and user experience,<sup>7</sup> while Google offers lower prices at

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<sup>1</sup> Jack Nicas & Keith Collins, *How Apple’s Apps Topped Rivals in the App Store It Controls*, N.Y. TIMES (Sept. 9, 2019), <https://www.nytimes.com/interactive/2019/09/09/technology/apple-app-store-competition.html>.

<sup>2</sup> Ingrid Lunden, *App Store Hits 20M Registered Developers and \$100B in Revenues, 500M Visitors per Week*, TECHCRUNCH (June 4, 2018, 1:20 PM EST), <https://techcrunch.com/2018/06/04/app-store-hits-20m-registered-developers-at-100b-in-revenues-500m-visitors-per-week>.

<sup>3</sup> Evan Niu, *As Usual, Apple’s App Store Revenue Leads Google Play in Third Quarter*, MOTLEY FOOL (Oct. 11, 2019, 10:00 AM), <https://www.fool.com/investing/2019/10/11/as-usual-apples-app-store-revenue-leads-google-pla.aspx>.

<sup>4</sup> Kif Leswing, *Apple’s App Store Had Gross Sales Around \$50 Billion Last Year, But Growth Is Slowing*, CNBC (Jan. 8, 2020, 6:01 AM EST), <https://www.cnbc.com/2020/01/07/apple-app-store-had-estimated-gross-sales-of-50-billion-in-2019.html>.

<sup>5</sup> Newsroom, *The App Store Turns 10*, APPLE (July 5, 2018), <https://www.apple.com/newsroom/2018/07/app-store-turns-10>.

<sup>6</sup> See *infra* Section I.a & text accompanying notes 18-21.

<sup>7</sup> See Peter Kafka, *Tim Cook Says Facebook Should Have Regulated Itself, But It’s Too Late for That Now*, VOX (Mar. 28, 2018, 12:15 PM EST), <https://www.vox.com/2018/3/28/17172212/apple-facebook-revolution-tim-cook-interview-privacy-data-mark-zuckerberg>.

the expense of monetizing user attention.<sup>8</sup> The differentiation reduces head-to-head competition between platforms and exacerbates lock-in effects. Further, any newcomers to the market would face significant entry barriers. To offer a new mobile-app platform, an entrant must corral enough developers to write apps for its systems and enough consumers to entice those developers in the first place. Entrants also lack Apple and Google's inherent ability to integrate their app stores with their operating systems and corresponding ability to leverage a large installed base of users.<sup>9</sup>

***Competitive harms.*** Apple has abused its market power to tie the distribution of digital goods to its proprietary in-app purchase system to impose a 30% tax and extract supracompetitive profits, leading to higher app prices and reduced innovation. Moreover, Apple has excluded rivals and favored its own apps by downgrading competitors' discovery and promotions, blocking certain rivals entirely (e.g., in the NFC payment market), and limiting others' access to key APIs, in some cases right after copying their apps. In conjunction with the discriminatory application of the 30% tax, Apple's conduct towards major multi-homing apps such as Spotify reduces cross-platform competition with Android and impedes the rise of future platforms reminiscent of Microsoft's exclusion of Netscape to preserve its Windows monopoly.

Apple has been seeking to diversify its business model<sup>10</sup> and has launched video-streaming, news, and video-game subscription services and piloted its own credit card, music, podcast, and

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<sup>8</sup> NETH. AUTH. FOR CONSUMERS & MKTS., MARKET STUDY INTO MOBILE APP Stores 83 (Apr. 11, 2019), <https://www.acm.nl/sites/default/files/documents/market-study-into-mobile-app-stores.pdf> [hereinafter Dutch ACM Study].

<sup>9</sup> While also developing an operating system is possible in theory, it entails the additional task of courting device manufacturers and competing against Google, which offers the Android operating system for free to device manufacturers. See *Android Is for Everyone*, ANDROID, <https://www.android.com/everyone>.

<sup>10</sup> Maribel Lopez, *Evaluating Apple's Services Strategy Ahead of the Apple Watch 5 Release*, FORBES (Sept. 7, 2019), <https://www.forbes.com/sites/maribellopez/2019/09/07/evaluating-apples-services-strategy-aheadof-the-apple-watch-5-release>.

health-tracking apps.<sup>11</sup> As Apple aggressively pushes into services and engages in self-preferencing conduct, apps in these categories increasingly face the risk of distorted competition.

Apple claims business justifications such as security, app discovery/promotion, and quality control. But they are either pretextual or unnecessarily restrictive, lacking a causal relationship to Apple's anticompetitive restrictions or are achievable by giving consumers choice.

In this report, we explore potential antitrust claims against Apple—namely tying, essential facilities, refusal to deal, and monopoly leveraging.

## I. MARKET POWER

Apple holds strong market power as a mobile app platform, which is required for both illegal tying and monopolization.<sup>12</sup>

### a. Indirect Evidence

***App Store as a distinct market.*** The App Store should be treated as its own distinct market. Though other app platforms exist—with Google's Play Store being the only even arguable comparator—none are reasonable alternatives to Apple's platform. For the more than 100 million iPhone owners in the United States,<sup>13</sup> the App Store is the sole way of discovering and downloading mobile apps. This is because the iPhone, iOS, and App Store are inextricably combined: buying an iPhone commits users to using the App Store and nothing but the App Store.

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<sup>11</sup> Julian Chokkattu, *Email App Maker Begs Apple CEO to Get Back on the App Store*, WIRED (Nov. 22, 2019, 1:23 PM), <https://www.wired.com/story/bluemail-developers-write-open-letter-to-apple-mac-app-store>; Newsroom, *Apple Services Now Available in More Countries Around the World*, APPLE (Apr. 21, 2020), <https://www.apple.com/newsroom/2020/04/apple-services-now-available-in-more-countries-around-the-world>.

<sup>12</sup> See *Illinois Tool Works v. Independent Ink*, 547 U.S. 28, 46 (2006); *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966).

<sup>13</sup> *Apple Grows iPhone Share in U.S., Despite Overseas Challenge*, EMARKETER (Mar. 12, 2019), <https://www.emarketer.com/content/apple-grows-iphone-share-in-us-despite-overseas-challenge>.

Hence roughly half of smartphone users are “locked-in” to the App Store unless they choose to purchase a new, non-Apple phone.

Several factors impede consumers who seek to switch away from the iPhone. New phones are expensive, costing at least several hundred dollars to over \$1000 for flagship models. As a result, consumers typically hold onto their smartphones for extended periods, on average 24.7 months before upgrading.<sup>14</sup> This ownership longevity is due in part to the high cost of smartphones and to carrier payment plans that allow consumers to pay for phones in monthly installments spread over 18-30 months.<sup>15</sup>

Beyond these tangible costs, many consumers will not want to switch in the first place for reasons unrelated to their App Store experience. For one, Apple has created a walled garden of products. Many consumers own an iPhone and also an iPad, Apple Watch, or MacBook. For these consumers, switching means giving up benefits like the ability to work on a different device and pick up exactly where you left off on another, take phone calls from your computer, forward text messages, and seamlessly transfer content.<sup>16</sup> Consumers also face additional non-monetary costs of switching—they may, for instance, lose their contacts and valued personal data when changing phones.<sup>17</sup>

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<sup>14</sup> See Abigail Ng, *Smartphone Users Are Waiting Longer Before Upgrading—Here’s Why*, CNBC (May 17, 2019), <https://www.cnbc.com/2019/05/17/smartphone-users-are-waiting-longer-before-upgrading-heres-why.html> (citing Kantar Worldpanel study).

<sup>15</sup> See Ella Wagner, *Getting a New Phone: Installments, Leasing, and Early Upgrades*, WHISTLEOUT (Mar. 22, 2019), <https://www.whistleout.com/CellPhones/Guides/a-guide-to-phone-payment-plans>.

<sup>16</sup> See *Use Continuity to Connect Your Mac, iPhone, iPad, iPod Touch, and Apple Watch*, APPLE, <https://support.apple.com/en-us/HT204681>. Developing these synergies has long been part of Apple’s plan to keep consumers in its orbit. Steve Jobs himself strategized in 2011 that the company should “[t]ie all of our products together, so we further lock customers into our ecosystem.” See Don Reisinger, *Steve Jobs Wanted to ‘Further Lock Customers’ into Apple’s ‘Ecosystem,’* CNET (Apr. 2, 2014, 7:13 AM PST), <https://www.cnet.com/news/steve-jobs-wanted-to-further-lock-customers-into-apples-ecosystem>.

<sup>17</sup> Personal data includes the panoply of applications and settings within those applications users have already set up on their device. Cf. Fiona Scott Morton et al., *Committee for the Study of Digital Platforms Market Structure and Antitrust Subcommittee Report*, GEORGE J. STIGLER CTR. FOR STUDY ECON. & ST. 84 (2019), <https://research.chicagobooth.edu/-/media/research/stigler/pdfs/market-structure-report.pdf> (describing switching costs generally)

In quantitative terms, researchers have found the cost of switching smartphone OS is around \$250 solely from “application purchasing cost, accessory purchasing cost, and uncertainty from the possibility of additional post-transition payment increase,” which excludes the additional costs of losing compatibility with other platform-specific smart devices.<sup>18</sup> This means that if iPhone apps see a 5% price increase—a “Small Significant Non-transitory Increase in Price” (SSNIP)<sup>19</sup>—amounting to \$5 per user given average annual app spending of \$100,<sup>20</sup> users would likely tolerate the price hike as switching costs would be over 50 times higher. The aforementioned factors are reflected in Apple’s 90% customer retention of iPhone users.<sup>21</sup> Put simply, Apple has an enduring hold over nearly 50% of U.S. smartphone users.

Defining the App Store as its own market is analogous to *Kodak*,<sup>22</sup> where the Court allowed a market definition limited to Kodak printers to proceed to summary judgment. In both cases, customers were locked in, and sellers could profitably “maintain supracompetitive prices in the aftermarket because the switching costs are high relative to the increase in service prices.”<sup>23</sup> In *Kodak*, the company presented a defense that sophisticated business buyers were unencumbered by its strategy of pricing printers low and services high because they could assess “lifecycle price.”<sup>24</sup> Here, Apple’s retail consumers display no hallmarks of sophistication. If anything, they

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<sup>18</sup> See Yuri Park & Yoonmo Koo, *An Empirical Analysis of Switching Costs in the Smartphone Market in South Korea*, 40 TELECOMM. POL’Y 307, 313-14 (2016). The dollar value is based on the exchange rate of 1 South Korean won to 0.00081 USD on April 24, 2020.

<sup>19</sup> See U.S. DEP’T OF JUST. & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES §§ 4.1.1-2 (2010), <https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf>.

<sup>20</sup> See Randy Nelson, *U.S. iPhone Users Spent an Average of \$100 on Apps in 2019, Up 27% from 2018*, SENSOR TOWER (Mar. 25, 2020), <https://sensortower.com/blog/revenue-per-iphone-2019>.

<sup>21</sup> *Mobile Operating System Loyalty: High and Steady*, CIRP (Mar. 21, 2018), <https://www.cirpllc.com/blog/2018/3/21/mobile-operating-system-loyalty-high-and-steady>.

<sup>22</sup> *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451 (1992).

<sup>23</sup> *Id.* at 476. The analog to service prices in the App Store’s case is an App Store experience degraded by higher prices and lower quality of offerings.

<sup>24</sup> *Id.*

are more susceptible to the behavioral bias of hyperbolic discounting that minimizes future costs.<sup>25</sup> More generally, the danger of increasing costs to captive consumers in the App-Store aftermarket becomes increasingly cognizable as Apple pivots to a services-focused strategy.<sup>26</sup>

**Market share.** The App Store should still have market power if the market were defined to include all mobile apps, including those available on Android. Apple has 71% of the U.S. mobile app market by revenue.<sup>27</sup> Its high and durable market share internationally—over 60% over the past 5 years—corroborates its market power in the United States.<sup>28</sup> Courts have found a market share higher than 70% in a market with substantial entry barriers sufficient for monopoly power<sup>29</sup> and 59% and 69% to be sufficient for tying.<sup>30</sup> Apple’s market share alone is thus likely to show market power.

#### b. Direct Evidence

Evidence of Apple’s market power over the mobile-app market can be gleaned from direct evidence of Apple exercising control over prices or excluding competitors.<sup>31</sup> Despite raising iPhone’s prices by around 33% over the past few years, Apple continues to hold strong control over customers and the iPhone’s unit sales volume has remained steady.<sup>32</sup> Further, the company

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<sup>25</sup> See Shili Shao, *Antitrust in the Consumer Platform Economy, Part II* (May 11, 2020) (manuscript).

<sup>26</sup> See *supra* Introduction.

<sup>27</sup> Reed Albergotti, *How Apple Uses its App Store to Copy the Best Ideas*, WASH. POST (Sept. 5, 2019), <https://www.washingtonpost.com/technology/2019/09/05/how-apple-uses-its-app-store-copy-best-ideas>.

<sup>28</sup> See Figure 2. STATISTA, *Global Mobile App Sales Revenue Distribution* (June 2019), <https://www.statista.com/statistics/259510/revenue-distribution-between-the-apple-app-store-and-google-play>.

<sup>29</sup> See, e.g., *Exxon Corp. v. Berwick Bay Real Estate Partners*, 748 F.2d 937, 940 (5th Cir. 1984) (“[M]onopolization is rarely found when the defendant’s share of the relevant market is below 70%.”).

<sup>30</sup> See *Dickson v. Microsoft Corp.*, 309 F.3d 193, 210 n.20 (4th Cir. 2002); *Bodet v. Charter Commc’ns*, 2010 U.S. Dist. LEXIS 87088, at \*17-19 (E.D. La. 2010); *In re Cox Enters. Set-Top Cable Television Box Antitrust Litig.*, 2010 U.S. Dist. LEXIS 58417, at \*19-20 (W.D. Okla. 2010).

<sup>31</sup> See *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 477-78 (1992) (“It is clearly reasonable to infer that Kodak has market power to raise prices and drive out competition . . . [from] direct evidence that Kodak did so”).

<sup>32</sup> See Figure 3. Evan Niu, *The Great Irony of Apple’s iPhone Price Increases*, MOTLEY FOOL (Dec. 6, 2018), <https://www.fool.com/investing/2018/12/06/the-great-irony-of-apples-iphone-price-increases.aspx>. An alternative but less convincing explanation of iPhone’s price increases is that quality improvement drives increased customer demand, as peer industry players’ profits took a nosedive after following Apple’s price hikes. For example,



has purposely deprecated its technology, likely to spur its users to buy new phones.<sup>33</sup> There is also testimony from developers that they cannot compete without being on the App Store. As the CEO of Basecamp testified before Congress, “[I]t’s essentially suicide not to have a presence on the iPhone.”<sup>34</sup>

Apple’s ability to tie its supracompetitive 30% IAP processing fee to App Store transactions offers further direct evidence of its market power. The Seventh Circuit has held that “[t]he best way to show power over price is to establish directly that the price of the tied package is higher than the price of components sold in competitive markets.”<sup>35</sup> Certain Android apps (e.g., ebooks and downloaded music) can be distributed through the Google Play Store and use their own in-app purchase services without having to pay any fee to Google.<sup>36</sup> Tinder, for instance, recently decided to exit Google’s payment system, even though it still has to use Apple’s IAP system and pay the 30% IAP tax on iOS.<sup>37</sup> Epic Games, the maker of Fortnite (one of the most popular games in history), similarly uses its own payment system to avoid fees in its Android

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Samsung, the only other meaningful player in the U.S. premium phone market, has had similar smartphone innovations—its latest flagship phone has been rated at 8.7 compared to similarly priced iPhone’s 8.8—but displays much weaker pricing power. Samsung’s smartphone profits dropped by 42% due to “weak sales momentum . . . and stagnant demand for [its] premium products” after raising prices, demonstrating Apple’s unique pricing power. *See* Scott Stein, *Apple iPhone XS Max Review*, CNET (Dec. 17, 2018), <https://www.cnet.com/reviews/apple-iphone-xs-max-review/>; Jessica Dolcourt, *Galaxy S20 5G Review*, CNET (Mar. 13, 2020), <http://www.cnet.com/reviews/samsung-galaxy-s20-5g-review/>; Catherine Shu, *Samsung Posts 55.6% Drop in Second-Quarter Profit as It Copes with Weak Demand and a Trade Dispute*, TECHCRUNCH (July 31, 2019), <https://techcrunch.com/2019/07/30/samsung-posts-55-6-drop-in-second-quarter-profit-as-it-cope-with-weak-demand-and-a-trade-dispute>.

<sup>33</sup> Romain Dillet, *Apple fined \$27 million in France for throttling old iPhones without telling users*, TECHCRUNCH (Feb. 7, 2020), <https://techcrunch.com/2020/02/07/apple-fined-27-million-for-throttling-old-iphones-without-telling-users>.

<sup>34</sup> Will Oremus, *Apple’s Secret Monopoly*, MEDIUM (Feb. 25, 2020), <https://onezero.medium.com/apples-secret-monopoly-5718272c16a5>. Courts have relied on such testimony before. *See, e.g.,* United States v. Am. Express Co., 88 F. Supp. 3d 143, 151-52 (E.D.N.Y. 2015), *rev’d*, 838 F.3d 179 (2d Cir. 2016), *aff’d sub nom.* Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018).

<sup>35</sup> *Will v. Comprehensive Accounting Corp.*, 776 F.2d 665, 671-72 (7th Cir. 1985) (citations omitted).

<sup>36</sup> *See* Developer Policy Center, *Monetization and Ads*, Google Play (Mar. 9, 2020), <https://play.google.com/about/monetization-ads>.

<sup>37</sup> *See* Olivia Carville, *Tinder Bypasses Google Play Joining Revolt Against App Store Fee*, BLOOMBERG (July 19, 2019, 2:42 PM EDT), <https://www.bloomberg.com/news/articles/2019-07-19/tinder-bypasses-google-play-joining-revolt-against-app-store-fee>.

version—but the App Store’s rules force Epic Games to continue to use Apple’s IAP.<sup>38</sup> This disparity makes clear that Apple has some “special ability” that others market players lack.

The story of Nintendo provides a telling parallel. Similar to Apple, Nintendo serves as a platform operator and distributes games for third-party developers in the video game console market. Around the late 1980s, when it held market dominance and tied game cartridge manufacturing to distribution, Nintendo charged developers approximately \$44 per game sold.<sup>39</sup> After FTC scrutiny undid the tie, and with competition emerging from Sega, Sony, and Microsoft, Nintendo lowered its royalty rate to \$7 per game.<sup>40</sup> Contrasting Apple’s 30% IAP fee, which has largely remained constant since 2008, with the precipitous drop in Nintendo’s royalty strongly suggests it is the Apple platform’s market power that allows it to maintain a supracompetitive price for the tied service.

## II. IN-APP PURCHASING SYSTEM

Apple’s App Store is the sole channel through which iPhone users may legally download apps.<sup>41</sup> Third-party app developers are required to submit the apps they have created to Apple for its review and approval.<sup>42</sup> Thus, third-party apps cannot reach iPhone consumers without following Apple’s rules and guidelines, including those governing how apps can be monetized.<sup>43</sup> Beyond the

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<sup>38</sup> See Nick Statt, *Fortnite for Android Will Ditch Google Play Store for Epic’s Website*, VERGE (Aug. 3, 2018), <https://www.theverge.com/2018/8/3/17645982/epic-games-fortnite-android-version-bypass-google-play-store>.

<sup>39</sup> See Andrei Hagiu, *Microsoft Xbox: Changing the Game?*, HARVARD BUSINESS SCHOOL, Case No. 9-707-501, at 6-13 (Feb. 6, 2007) (on file with authors).

<sup>40</sup> See *id.*; Andrew Quemere, *The People Versus Mario: The FTC’s Forgotten Investigation into Nintendo in the ’90s*, MUCKROCK (Feb. 2, 2017), <https://www.muckrock.com/news/archives/2017/feb/02/people-versus-mario-ftcs-investigation-nintendo>.

<sup>41</sup> See generally *App Store Review Guidelines*, APPLE (Mar. 8, 2020), [developer.apple.com/app-store/review/guidelines](https://developer.apple.com/app-store/review/guidelines) [hereinafter *App Store Review Guidelines*].

<sup>42</sup> See *id.*

<sup>43</sup> See *id.* § 3. Only after Apple finds that an app is compliant with this set of rules will Apple distribute it to users. See generally *id.*

basic functionality provided by an app, developers may sell bonus features or digital goods within the app interface,<sup>44</sup> such as “subscriptions, in-game currencies, game levels, access to premium content, or unlocking a full version.”<sup>45</sup>

a. Apple’s conduct

For in-app digital goods to be distributed to purchasing users, Apple requires developers to configure their apps so that all purchases of digital goods are channeled through Apple’s in-app purchase (IAP) system, which helps process the transactions.<sup>46</sup> With very limited exceptions, Apple takes a 30% cut of all third-party IAP transactions—the IAP tax.<sup>47</sup> The App Store’s rules forbid app developers from offering alternative payment mechanisms or even providing information about them.<sup>48</sup> Apps violating these rules are rejected or removed from the App Store. The rules thus forcefully combine the IAP system with the distribution of paid digital goods and protect Apple’s continuing ability to impose a burdensome 30% tax that harms developers and consumers alike to the extent of tens of billions of dollars.

Apple essentially stands as a middleman between developers offering in-app digital goods for purchase and iPhone users, but refuses to broker any deal unless developers and consumers use Apple’s expensive payment system. While developers aim to serve iPhone users who are “locked in” to the App Store, they do not similarly seek use of Apple’s supracompetitively priced payment system. But the App Store’s rules—set and enforced by Apple unilaterally—force developers to route their transactions through the IAP. As a result, consumers seeking to purchase high-quality

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<sup>44</sup> See *In-App Purchase*, APPLE (accessed Mar. 9, 2020), <https://developer.apple.com/in-app-purchase>.

<sup>45</sup> *App Store Review Guidelines*, *supra* note 41, § 3.1.

<sup>46</sup> See *id.*

<sup>47</sup> See *id.* § 3; *Five Fast Facts*, SPOTIFY: TIME TO PLAY FAIR (Apr. 30, 2019), <https://timetoplayfair.com/facts>.

<sup>48</sup> “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.” *App Store Review Guidelines*, *supra* note 41, § 3.1.1.

digital goods at a reasonable price often end up paying an inflated amount or, as recent experience has shown, may be denied the ability to purchase services available on other platforms due to the restrictions imposed by the IAP system.

b. Consumer harm

Consumers suffer harm along several dimensions as a result of Apple’s IAP tie. First, iPhone users are forced to pay higher prices for subscription apps and digital services as the IAP overcharge is passed through to consumers. Nearly every major music streaming app, for example, is 30% more expensive on iOS than Android (see Table 1)—except for Apple Music, as Apple exempts its own apps from the 30% fee.<sup>49</sup> Consumer welfare is clearly at stake: subscription apps, such as Spotify, comprise 94% of the top 250 U.S. apps on iOS<sup>50</sup> and are a central component of the user experience; the top 1% of apps generate 93% of total revenue and 80% of new installations.<sup>51</sup> Second, Apple’s 30% tax artificially suppresses the competitiveness of app

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<sup>49</sup> See Tidal, Pandora, and YouTube Music’s iOS apps, as accessed on April 30, 2019. Spotify, which similarly costs 30% more on iOS, decided to exit the IAP system in 2016 and stopped offering subscriptions on iOS altogether. See *a Timeline: How We Got Here*, SPOTIFY: TIME TO PLAY FAIR (Apr. 30, 2019), [timetoplayfair.com/timeline](https://timetoplayfair.com/timeline). Apple’s 30% tax makes it economically infeasible for Spotify et al. to maintain their \$9.99 Android price tag on iOS. If Spotify offered subscriptions at \$9.99, for example, it would lose money on every subscription it sells given its 26% gross profit margin. See SPOTIFY, ANNUAL REPORT (Form 20-F) (2018) [https://s22.q4cdn.com/540910603/files/doc\\_financials/annual/SPOT\\_20F\\_Master-Master\\_Exhibits\\_HTML.pdf](https://s22.q4cdn.com/540910603/files/doc_financials/annual/SPOT_20F_Master-Master_Exhibits_HTML.pdf). Given Apple Music’s dominant position in the market for music streaming services—holding at least 70% of paid iOS listeners in the United States—and Apple’s deep pockets, competitors will understandably balk when faced with additional anticompetitive restrictions. About 50 U.S. consumers paid for streaming music in 2018. James Shotwell, *50 Million US Consumers Paid for Streaming Music Last Year, RIAA Says*, HAULIX DAILY (Mar. 1, 2019), [haulixdaily.com/2019/03/streaming-music-subscribers-2019](https://haulixdaily.com/2019/03/streaming-music-subscribers-2019). Although we do not currently have a breakdown of how many of these users are on iOS, even assuming a generous 80% iOS user rate—iOS users account for about 45% of U.S. smartphone users overall—Apple Music’s 28 million paid subscribers would make up 70% of the assumed 40 million paid iOS users. See Anne Steele & Tripp Mickle, *Apple Music Overtakes Spotify in Paid U.S. Subscribers*, WALL ST. J. (Apr. 5, 2019), <https://www.wsj.com/articles/apple-music-overtakes-spotify-in-u-s-subscribers-11554475924>; *Mobile OS Market Share in the U.S. 2018*, STATISTA, [www.statista.com/statistics/266572/market-share-held-by-smartphone-platforms-in-the-united-states](https://www.statista.com/statistics/266572/market-share-held-by-smartphone-platforms-in-the-united-states).)

<sup>50</sup> Lexi Sydow, *Subscriptions: The Revenue Model Powering Mobile Apps*, APP ANNIE (Feb. 13, 2020), <https://www.appannie.com/en/insights/market-data/subscriptions-powering-mobile-apps>;

<sup>51</sup> Katie Williams, *The Top 1% of App Publishers Generate 80% of All New Installs*, SENSOR TOWER (Nov. 21, 2019), <https://sensortower.com/blog/top-one-percent-downloads>.

developers and diminishes meaningful consumer choice.<sup>52</sup> Apple’s anticompetitive tax has already lessened head-to-head competition for music streaming services as evidenced by Spotify’s recent pivot away from music (toward podcasts).<sup>53</sup> In some cases, the burden of the IAP fee has forced prominent app publishers to exit the IAP system altogether—Netflix, Kindle, and YouTube TV are prominent examples.<sup>54</sup> As a result, iPhone users, who are locked in to the iOS platform, are frustrated by their inability to buy or subscribe to digital content that is available on other platforms.<sup>55</sup> Third, imposing the IAP fee on app developers hinders innovation in key downstream app markets by raising rivals’ costs. As Apple expands its presence into service markets,<sup>56</sup> the threat of its anticompetitive 30% tax looms ever larger for its rivals—and consumers, who stand to lose from higher prices, diminished competition, and suppressed innovation.<sup>57</sup>

c. Tying

Apple unlawfully ties its proprietary in-app purchase system to paid digital goods distribution services within iPhone apps. Section 1 of the Sherman Act prohibits tying in restraint

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<sup>52</sup> Apple has collected around \$66.4 billion from developers by 2019, a gigantic tax on app innovations. Calculations are based on data disclosed by Apple and assuming a 30% or so take rate. *See Apple Rings in New Era of Services Following Landmark Year*, APPLE (Jan. 8, 2020), <https://www.apple.com/newsroom/2020/01/apple-rings-in-new-era-of-services-following-landmark-year>.

<sup>53</sup> Ben Thompson, *Spotify’s Podcast Aggregation Play*, STRATECHERY, (Feb. 7, 2019), <https://stratechery.com/2019/spotify-podcast-aggregation-play>.

<sup>54</sup> *See* Juli Clover, *YouTube TV Ending Support for App Store Subscriptions in March*, MACRUMORS (Feb. 13, 2020), <https://www.macrumors.com/2020/02/13/youtube-tv-app-store-subscriptions-ending>; Stuart Dredge, *Netflix Joins Spotify in Bypassing Apple in-App Subscriptions*, MUSIC ALLY (Aug. 22, 2018), [musically.com/2018/08/22/netflix-joins-spotify-in-bypassing-apple-in-app-subscriptions](https://musically.com/2018/08/22/netflix-joins-spotify-in-bypassing-apple-in-app-subscriptions).

<sup>55</sup> Apple forbids apps from even informing customers that the subscription services may be purchased elsewhere (e.g., these apps’ websites). In Spotify’s iPhone app, for instance, customers are only informed that “[y]ou can’t upgrade to Premium in the app. We know, it’s not ideal.” Further, the 30% tax renders unviable many apps’ business models, which stifles innovation. Web apps, subscription-based apps, and middleman-type apps that match users and sellers of digital goods in exchange for a commission are examples of such low-margin apps that will find it very difficult, if possible at all, to exist on iOS.

<sup>56</sup> Kelly Heather, *Apple Event 2019: Everything Announced at Apple’s Big March Presentation*, CNN (Mar. 26, 2019), <https://www.cnn.com/2019/03/25/tech/apple-tv-channels-details/index.html>.

<sup>57</sup> For example, Netflix’s operating profit margin remained below 10% for most of its existence. *See Netflix Operating Margin 2006-2019*, NFLX, MACROTRENDS (Mar. 12, 2020), <https://www.macrotrends.net/stocks/charts/NFLX/netflix/operating-margin>.

of trade.<sup>58</sup> In addition to market power,<sup>59</sup> per se tying claims usually need to demonstrate that (1) two separate products or services are involved, (2) the sale of one product or service is conditioned on the purchase of another, and (3) there is an anticompetitive effect in the market for the tied product, affecting not an insubstantial amount of interstate commerce.<sup>60</sup>

**Separability.** For two services to be separate, the Supreme Court has held that “there must be sufficient [buyer] demand so that it is efficient for a firm to provide [one service] separately from [another].”<sup>61</sup> Courts have found sufficient separate demand when two offerings were previously sold separately and when other industry suppliers sell the products separately.<sup>62</sup> Apple offered the distribution of in-app subscriptions independent of IAP services until 2011.<sup>63</sup> Moreover, Android allows certain developers to distribute their paid in-app digital goods without using its payment services.<sup>64</sup>

**Forceful Conditioning.** Most courts require some proof of coercion to establish forceful conditioning.<sup>65</sup> Often “a formal agreement is . . . sufficient” to show coercion.<sup>66</sup> Apple expressly

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<sup>58</sup> See HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY 534 (5th ed. 2016).

<sup>59</sup> See Part I.

<sup>60</sup> See HOVENKAMP, *supra* note 58.

<sup>61</sup> Eastman Kodak Co. v. Image Tech. Servs., Inc., 504 U.S. 451, 462 (1992).

<sup>62</sup> See *id.*; Associated Press v. Taft-Ingalls Corp., 340 F.2d 753, 759-64 (6th Cir. 1965).

<sup>63</sup> See *Apple Launches Subscriptions on the App Store*, APPLE (Feb. 15, 2011), <https://web.archive.org/web/20110307215013/https://www.apple.com/pr/library/2011/02/15appstore.html> (announcing the policy); John Gruber, *Dirty Percent*, DARING FIREBALL (Mar. 1, 2011), [https://daringfireball.net/2011/03/dirty\\_percent](https://daringfireball.net/2011/03/dirty_percent); *Why You Should Fight Apple's Subscription Extortion*, TREEHOUSE (Feb. 15, 2011), <https://blog.teamtreehouse.com/why-you-should-fight-apples-subscription-extortion> (discussing Apple's 2011 policy to force subscription apps to use the IAP system);

<sup>64</sup> For example, apps selling songs and ebooks that can be played on other music players or read on other devices can be distributed through the Google Play Store and use their own payment services for user purchases of in-app features. See *Monetization and Ads*, GOOGLE PLAY: DEVELOPER POL'Y CTR (Mar. 9, 2020), <https://play.google.com/about/monetization-ads>; Carville, *supra* note 36. Apple's own Mac App Store also does not require developers to go through Apple's IAP system and pay a similar 30% fee in order to distribute their digital goods—indeed 77% of Mac developers choose to avoid the IAP either completely or partially. See Matthew Hughes, *The Mac App Store Is Now Slightly Less Hated by Developers*, THE NEXT WEB (Jun 15, 2017), <https://thenextweb.com/apple/2017/06/15/the-mac-app-store-is-now-slightly-less-hated-by-mac-developers>.

<sup>65</sup> See, e.g., *Paladin Assocs. v. Mont. Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003).

<sup>66</sup> *Ungar v. Dunkin' Donuts of Am., Inc.*, 531 F.2d 1211, 1224 (3d Cir. 1976).

conditions the distribution of in-app digital goods on the use of IAP through the App Store rules, which forbid alternative payment mechanisms.<sup>67</sup> Since developers cannot distribute apps without following these rules, they are being coerced into paying a 30% tax on their sales.

***Anticompetitive Effects.*** Recent cases require showing anticompetitive effects in the tied product market even for per se tying claims.<sup>68</sup> Courts generally consider impacts on price, quality, quantity, and innovation.<sup>69</sup> In two-sided markets, the Supreme Court has required considering both sides as a whole and investigating the net effects on consumers.<sup>70</sup> Here, both sides of the market are worse off due to Apple’s tying restraint, yielding a negative net effect.

Consumers face higher prices, diminished competition, and suppressed innovation as a result of Apple’s IAP tie.<sup>71</sup> Developers are forced to pay a supracompetitive price for payment services and have reduced choice. Absent the restraint, developers would be able to process their transactions for a significantly lower fee of 2-5%, which is what credit card companies and PayPal charge for processing digital-goods transactions on many Android apps.<sup>72</sup> They could also offer alternative payment methods<sup>73</sup> and potentially reach customers without credit cards.<sup>74</sup>

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<sup>67</sup> See text accompanying note 48.

<sup>68</sup> See *Princo Corp. v. Int’l Trade Comm’n*, 616 F.3d 1318, 1338 (Fed. Cir. 2010); *E & L Consulting v. Doman Indus.*, 472 F.3d 23, 32 (2d Cir. 2006). Establishing illegal tying also requires “that a not insubstantial amount of interstate commerce” in the tied product must be affected, which is a de minimis threshold standard easily met by the IAP processing market that is worth billions of dollars. See, e.g., *Tic-X-Press v. Omni Promotions Co.*, 815 F.2d 1407, 1419 (11th Cir. 1987) (finding that \$10,091 is “not insubstantial”).

<sup>69</sup> See, e.g., *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2282, 2288-90 (2018).

<sup>70</sup> See *id.* at 2287, 2302.

<sup>71</sup> *Supra* Section II.b.

<sup>72</sup> See *Monetization and Ads*, GOOGLE PLAY: DEVELOPER POL’Y CTR. (Mar. 9, 2020), <https://play.google.com/about/monetization-ads>; Gruber, *supra* note 63.

<sup>73</sup> One method is payment using a QR code—a method that has broad appeal in developing countries (particularly in China). See Serenitie Wang, *Why China Can’t Get Enough of QR Codes*, CNN BUSINESS (Sept. 8, 2017, 6:46 AM EST), <https://money.cnn.com/2017/09/08/technology/china-qr-codes/index.html>.

<sup>74</sup> Such customers represent approximately 90 percent of the hundreds of millions of consumers in developing countries that may generate sales for U.S. developers and help spur innovation for American consumers as well. Rurika Imahashi & Mitsuru Obe, *Credit Cards Fall Behind in Asia’s Race to Go Cashless*, NIKKEI ASIAN REV. (2019), <https://asia.nikkei.com/Business/Business-trends/Credit-cards-fall-behind-in-Asia-s-race-to-go-cashless>.

Tying can also be established under the rule of reason if the tie’s harm outweighs its procompetitive efficiencies.<sup>75</sup>

### III. REMOVING COMPETITORS FROM APP STORE

#### a. Apple’s conduct

Apple has used its control over the App Store to altogether bar developers of rival apps from the platform. A prominent example is Apple removing or restricting screen-time apps after it decided to create its own screen-time tracker.<sup>76</sup> Apple told developers that their apps violated App Store policies, even though the company “had allowed such practices for years and had approved hundreds of versions of their apps.”<sup>77</sup> And when companies asked what they could do to make their app comply, Apple simply responded, “Your app has an unresolved issue and has been removed from the App Store.”<sup>78</sup>

Apple has claimed that its removal of these apps was motivated by privacy and safety concerns, but its timing has been suspicious. When it reinstated these competing apps, it did so the same day that the media reported that the Department of Justice (DOJ) would be handling any potential antitrust investigation into Apple.<sup>79</sup> Its remedy for its alleged privacy concerns was bizarre—it allowed the apps back on so long as they agreed not to “sell, use or disclose to third parties any data for any purpose.”<sup>80</sup> Apple could have easily attached this proviso when it first

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<sup>75</sup> See *United States v. Microsoft Corp.*, 253 F.3d 34, 84-97 (D.C. Cir. 2001) (en banc) (adopting rule of reason approach to the analysis of tying cases with respect to software platforms). For an analysis of the efficiencies, see *infra* Part V.

<sup>76</sup> Jack Nicas, *Apple Cracks Down on Apps That Fight iPhone Addiction*, N.Y. TIMES (Apr. 27, 2019), <https://www.nytimes.com/2019/04/27/technology/apple-screen-time-trackers.html>.

<sup>77</sup> *Id.*

<sup>78</sup> *Id.*

<sup>79</sup> *Id.*

<sup>80</sup> *Id.*



flagged its concerns. As the CEO of Freedom, a competing app, put it, “Why this last year of pain? And we end up exactly in the same place.”<sup>81</sup>

Even though Apple reinstated these apps, their claims may not be moot.<sup>82</sup> Still, other plaintiffs can likely be found, as Apple has refused to approve apps that compete with its own “Find My Friends” app,<sup>83</sup> as well as the mobile app for Steam, a video-game service. The rejection of Steam was explained by citing a “business conflict,”<sup>84</sup> which casts the launch of the Apple Arcade app a year later in a suspicious light.<sup>85</sup> Further, payment-services apps have complained about being rejected from the App Store; Samsung reported its Pay Mini app was rejected without any explanation.<sup>86</sup> Looking forward, Apple will compete with more apps on its App Store as it expands into services.<sup>87</sup>

b. Consumer harm

Apple’s conduct towards competitors harms consumers, illustrated concretely by the example of screen-time apps. After Apple removed rivals OurPact and Mobicip, consumers who turned to Apple’s own screen-time tool found it “more complicated and less restrictive.”<sup>88</sup> Apple’s product was also more susceptible to user circumvention and less nimble—it had no feature to allow parents to quickly disable features on their children’s phones and required parents and

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<sup>81</sup> *Id.*

<sup>82</sup> Because Apple voluntarily allowed the apps back on and may revoke their access after the theoretical case has been dismissed, these plaintiffs may be able to survive a mootness challenge. *See United States v. W.T. Grant Co.*, 345 U.S. 629, 632 (1953).

<sup>83</sup> Peter Kafka, *Spotify Says Apple Won’t Approve a New Version of Its App Because It Doesn’t Want Competition for Apple Music*, VOX (June 30, 2016, 12:45 PM EST), <https://www.vox.com/2016/6/30/12067578/spotify-apple-app-store-rejection>.

<sup>84</sup> Nick Statt, *Apple Rejects Valve’s Steam Link Game Streaming App over ‘Business Conflicts’*, VERGE (May 24, 2018, 8:59 PM EST), <https://www.theverge.com/2018/5/24/17392470/apple-rejects-valve-steam-link-app-store-ios-game-streaming>.

<sup>85</sup> *Id.*; Newsroom, *Apple Arcade: It’s Time to Play*, APPLE (Sept. 16, 2019), <https://www.apple.com/newsroom/2019/09/apple-arcade-its-time-to-play>.

<sup>86</sup> *Dutch ACM Study*, *supra* note 8, at 79.

<sup>87</sup> *See supra* Introduction.

<sup>88</sup> Nicas, *supra* note 76.

children both to own iPhones.<sup>89</sup> By denying rivals access to the App Store, Apple gives consumers fewer and worse options to choose from. And because switching app ecosystems entails such high costs,<sup>90</sup> consumers will stay on the platform, even though they suffer decreased choice and quality. In the longer term, Apple removing its competitors creates fear of Apple’s opportunism that deters new developers from entering and existing developers from innovating on their products.

c. Potential antitrust violations

**1. Monopoly power**

The relevant markets for this category of conduct are the downstream app markets where Apple competes with third-party developers. With screen-time apps, for instance, the market would consist of all services with reasonably substitutable abilities to track and control users’ time spent on their iPhones. Determining whether Apple has monopoly power in a specific downstream app market can be shown through high market share.<sup>91</sup> In the case of screen-time apps, market share may be sufficiently high because Apple’s Screen Time app is installed by default on every iPhone running iOS 12 or higher. But determining Apple’s market share requires more fact research, as it depends on the number of consumers using screen-tracking products and how many of those consumers use Apple’s Screen Time.

Alternatively, monopoly power can also be shown through direct evidence by asking whether Apple can “control prices or exclude competition.”<sup>92</sup> In markets like screen-time apps, plaintiffs could show market power by pointing to Apple’s ability to “power to exclude competition from the relevant market generally” by virtue of its control over the App Store.<sup>93</sup>

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<sup>89</sup> *Id.*

<sup>90</sup> *See supra* Section I.a.

<sup>91</sup> *See Exxon Corp. v. Berwick Bay Real Estate Partners*, 748 F.2d 937, 940 (5th Cir. 1984) (“[M]onopolization is rarely found when the defendant’s share of the relevant market is below 70%.”).

<sup>92</sup> *United States v. E.I. duPont de Nemours & Co.*, 351 U.S. 377, 391 (1956).

<sup>93</sup> *L.A. Land Co. v. Brunswick Corp.*, 6 F.3d 1422, 1426-27 (9th Cir. 1993).

Apple's moves to remove or restrict 11 of the top 17 most-downloaded screen-time apps stands in contrast to cases where courts have dismissed Section 2 claims for highlighting the exclusion of only a single competitor.<sup>94</sup> Though Apple's conduct is directed at competitors, the Eleventh Circuit recognized in *McWane* that "in a competitive market . . . injury to a single competitor may not have a significant effect on overall competition due to the persistence of other rivals," but "competitors and competition are linked, particularly in the right market settings."<sup>95</sup> In the case of screen-time apps, Apple's control over the App Store allowed it to reduce the competition it faced by removing rivals, which immediately reduced consumer choice and quality, given its own app's more limited functionalities.

Further, Apple's monopoly power could potentially be shown through its lower quality offerings, although this may be difficult to prove; even if Apple's service had worse features than that of its rivals, its product would likely offer some advantage by virtue of being integrated into iOS. Still, quality harms are central to competition in the app market and therefore worth monitoring, as many apps do not compete on price because they are free.

## **2. Essential facilities**

The App Store presents one of the "limited circumstances" where a company refusing to deal with its competitors rises to the level of violating the antitrust laws.<sup>96</sup> What distinguishes the App Store from a generic company denying access to a competitor is that Apple's app platform is an essential facility under the test developed in *MCI Communications v. AT&T*, which requires (1) control of the essential facility by a monopolist; (2) a competitor's inability to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of

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<sup>94</sup> See e.g., *PNY Techs., Inc. v. SanDisk Corp.*, 2012 U.S. Dist. LEXIS 55965 at \*27 ("PNY has identified only one specific instance of a competitor leaving the market.").

<sup>95</sup> *McWane, Inc. v. Fed. Trade Comm'n*, 783 F.3d 814, 836 (11th Cir. 2015).

<sup>96</sup> *Pacific Bell Tel. Co. v. Linkline Commc'ns, Inc.*, 555 U.S. 438, 447-48 (2009).

providing the facility.<sup>97</sup> Apple undeniably controls the App Store and has removed rivals from the platform, satisfying elements of (1) and (3).

**(1) Essential to the mobile-app economy.** In the mobile-app market, the App Store is a critical distribution point that connects developers and users. In its mediating role, the App Store helps consumers discover new services,<sup>98</sup> and helps developers reach critical masses of consumers without the costly need to build brand recognition.

Denying developers from the App Store would “inflict[] a severe handicap on potential market entrants”<sup>99</sup> because developers cannot reach consumers effectively without access to distribution. Further, the Android platform is not an alternative. iPhone users are locked into iOS, and there is little cross-platform competition between iOS and Android, meaning developers cannot reach captive iPhone users by offering their apps on the Android platform.<sup>100</sup>

**(2) Developers’ inability to duplicate an app platform.** Asking developers to create their own app platform is infeasible and unwise. The entire point of an app platform is to create a central place for developers and consumers to meet and transact. App platforms accordingly derive value from indirect network effects—that is, having more apps on the platform attracts more consumers, and vice versa. So asking developers to create their own is the 21<sup>st</sup>-century equivalent of requiring “every railroad company provide its own track” when “all incoming trains should reach a common focus.”<sup>101</sup> In the mobile-app market, absurdity and inefficiency would result—requiring

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<sup>97</sup> 708 F.2d 1081, 1132-33 (7th Cir. 1983).

<sup>98</sup> As the Dutch Competition Authority’s market study on mobile apps reported, “[A]pp stores are an important channel to discover new apps since around one half of app downloads concern apps that consumers would not have known or downloaded otherwise.” *Dutch ACM Study*, supra note 8, at 23.

<sup>99</sup> *Hecht v. Pro-Football, Inc.*, 570 F.2d 982, 992 (D.C. Cir. 1977).

<sup>100</sup> See *supra* Introduction.

<sup>101</sup> The Supreme Court, contemplating this possibility in *Terminal Railroad*, lambasted the ludicrousness of this ask: “[N]ot only would the expense of obtaining the necessary rights of way be so enormous as to amount to the exclusion of all but a few of the strongest roads, but, if it could be accomplished, the city would be cut to pieces with the many lines of railroad intersecting it in every direction, and thus the greatest agency of commerce would become the greatest burden.” *United States v. Terminal Rail Ass’n*, 224 U.S. 383, 403 (1912).

developers to create their own app platform would hinder users' ability to discover apps and impede developers from entering in the first place, given the crushing entry costs they would bear.

**(4) Feasibility.** Requiring Apple to allow rival apps onto its platform is feasible, as demonstrated by its prior course of conduct with its screen-time competitors and also its subsequent decision to allow them back onto the App Store. And while Apple may cite privacy or security concerns for removing apps, a less restrictive alternative would be for Apple to announce and enforce the terms in its policies, rather than subjecting third-party apps to the risk of being removed at any time at Apple's unilateral discretion.

**Dispelling general concerns.** The *Trinko* Court's concerns with essential facilities do not apply or apply with attenuated force for Apple.<sup>102</sup> Unlike Verizon, Apple is not subject to any regulation that compels it to share access. The lack of a regulatory overlay in the mobile-app market means that the antitrust laws bear primary responsibility for ensuring the market's competitiveness.<sup>103</sup>

Further, the Court worried that “[c]ompelling such firms to share the source of their advantage . . . may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities.”<sup>104</sup> But this concern ignores that there is also innovation occurring on the platform that Apple's conduct is precluding. Arguably, there is greater scope for innovation in the app market as opposed to the OS. The App Store has driven mobile-app innovation—twice as many iOS apps later appear on the Android platform compared to the

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<sup>102</sup> *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398 (2004).

<sup>103</sup> “Where such a structure exists,” the *Trinko* Court stated, “the additional benefit to competition provided by antitrust enforcement will tend to be small, and it will be less plausible that the antitrust laws contemplate such additional scrutiny.” *Id.* at 412.

<sup>104</sup> *Id.* at 407-08.

reverse.<sup>105</sup> The more concrete and immediate harms to innovation on the platform should be considered alongside the traditional concerns about dampening competition between platforms.

### **3. Refusal to deal**

For years, Apple had allowed paid parental-control apps on the App Store and benefited from the 30% fee developers paid. When Apple developed its own parental-control apps and removed rivals from the App Store, it lost fees from those products and gained no subscription revenue, as its own offering was free with a software update. Apple's decision to terminate a voluntary, profitable course of dealing shows an intent to improperly exclude rivals.<sup>106</sup>

### **4. Monopoly leveraging**

Removing rival apps from the App Store also gives rise to a monopoly leveraging claim.<sup>107</sup> Specifically, Apple has monopoly power in the mobile-platform market<sup>108</sup> and is using that platform to exclude rivals explicitly. In foreclosing rivals, Apple has a dangerous probability of monopolizing the secondary app market. By virtue of its totalizing control, Apple can remove all competitor apps in any given category, leaving its own product as the sole offering. Locked-in iPhone consumers will have no recourse to download mobile apps from another source. Stated simply, Apple's all-encompassing power to constrain app downloads to the App Store and then control what is offered on the App Store creates a dangerous probability of success.

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<sup>105</sup> Shannon Liao, *Apple's Total Number of Apps in the App Store Declined for the First Time Last Year*, VERGE (Apr. 5, 2018, 6:07 PM EST), <https://www.theverge.com/2018/4/5/17204074/apple-number-app-store-record-low-2017-developers-ios>.

<sup>106</sup> *Trinko*, 540 U.S. at 398. "Improper exclusion (exclusion not the result of superior efficiency) is always deliberately intended." *Aspen Skiing*, 472 U.S. 585, 604 (1985) (quoting ROBERT BORK, *THE ANTITRUST PARADOX* 160 (1978)).

<sup>107</sup> *Trinko* lays out the current requirements for a leveraging claim. *See* 540 U.S. at 415 n.4 (2004).

<sup>108</sup> *See supra* Part II.

## IV. SELF-PREFERENCING

### a. Apple's conduct

Apple's integrated system gives it multiple levers to advantage itself over rivals—to the detriment of consumers.

**30% tax on rivals.** Apple takes a 30% cut from all third-party IAP transactions.<sup>109</sup>

Apple's own proprietary apps such as Apple Music are not subject to the same 30% tax.

**Preferential search results and visual prominence on the App Store.** An app's visual prominence on the App Store is crucial to consumers discovering and downloading the app.<sup>110</sup>

Apple has consistently favored its apps by displaying them more prominently than similar apps in App Store search results and on the App Store home page.<sup>111</sup> For instance, Apple Arcade has an entire tab on the App Store, which serves as a prominent in-feed ad for the service.<sup>112</sup>

**Promotions and marketing restrictions on rivals.** Apple aggressively markets its proprietary apps through push notifications that request users to re-subscribe,<sup>113</sup> but it restricts rivals from deploying the same tactics.<sup>114</sup>

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<sup>109</sup> See *supra* Section II.a.

<sup>110</sup> Nicas & Collins, *supra* note 1 (noting that two-thirds of app downloads started with a search). Apple would concede the importance of search, having generated \$50 billion in App Store sales in 2019. Further, empirical evidence shows that 44% of consumers choose the app that comes first in the search results, and up to 87% of the consumers choose an app from the top 5 results, which are mostly presented at the same time without the need to scroll down. See Leyla Dogruel et al., *Choosing the Right App: An Exploratory Perspective on Heuristic Decision Processes for Smartphone App Selection*, 3 MOBILE MEDIA & COMM'N 125 (2014).

<sup>111</sup> Tripp Mickle, *Apple Dominates App Store Search Results, Thwarting Competitors*, WALL ST. J. (July 23, 2019), <https://www.wsj.com/articles/apple-dominates-app-store-search-results-thwarting-competitors-11563897221>. According to an analysis of six years of search results compiled by Sensor Tower, an app analytics firm, Apple's apps have ranked first for at least 700 of roughly 60,000 search terms in the store. See Nicas & Collins, *supra* note 1.

<sup>112</sup> See *The Paywalled Garden: iOS Is Adware*, STEVE STREZA (Feb. 17, 2020), <https://stevestreza.com/2020/02/17/ios-adware>.

<sup>113</sup> *Id.*

<sup>114</sup> For instance, it has restricted information about premium subscription and promotional campaigns from Spotify, Apple Music's biggest competitor, through its control of the App Store review system. Apple rejected several Spotify app updates for using promotional language, such as "Get 3 months now for €0.99" or "Get in, Get Premium," while Apple Music was able to use such promotional language. See *A Timeline: How We Got Here*, SPOTIFY: TIME TO PLAY FAIR, <https://www.timetoplayfair.com/timeline>.

**Data access.** Requiring IAP grants Apple full access to consumers' payment data,<sup>115</sup> which allows Apple to learn from the performance of downstream competitors and use this information to improve its own offerings. Beyond payment data, Apple can also monitor how much time users spend on particular apps and has used that information to decide what products to develop.<sup>116</sup> Third party developers lack such data.

**Communicating with iOS/hardware.** Apple has also restricted interoperability of its operating system to bar certain apps from accessing its APIs, such as Siri.<sup>117</sup> Apple's apps, on the other hand, were able to use their ecosystems to their fullest.<sup>118</sup> Apple also restricts rival app developers from accessing iPhone functionalities. In current and past versions of iOS, Apple allowed only its Apple Pay app to access the iPhone's NFC chip. NFC technology is used to seamlessly transfer data between devices and is most often used by mobile payment services.

**Sherlocking.** Apple can closely monitor the success of other apps and pluck rivals' winning concepts for itself without expending the costs to determine whether a project would be viable. Over the years, Apple has created its own version of features that were offered first in third-party apps including its "Measure" app, animated emojis, swipe-typing and most recently, period tracking.<sup>119</sup> Apple's co-opting of these features often renders rivals' offerings redundant.

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<sup>115</sup> *Dutch ACM Study, supra* note 8

<sup>116</sup> Albergotti, *supra* note 27.

<sup>117</sup> *Dutch ACM Study, supra* note 8, at 83.

<sup>118</sup> *Id.*

<sup>119</sup> Albergotti, *supra* note 27.



**App Store Guidelines.** At its sole discretion, Apple can restrict apps that violate its vague “Review Guidelines.”<sup>120</sup> Apple has invoked these guidelines to force competitors to remove key functionalities from their apps.<sup>121</sup>

**Device defaults.** Apple has employed defaults to steer consumers towards its preferred offerings.<sup>122</sup> Because consumers often cannot change these default settings, the settings allow Apple to lock in consumers to its products by raising the cost of accessing third-party offerings for the same services.<sup>123</sup>

b. Consumer harm

**Raising rivals’ costs.** The combined effect of Apple’s self-preferencing behavior is to raise rivals’ costs. For instance, the 30% discriminatory tax means that even an equally efficient competitor must charge higher prices than Apple.<sup>124</sup> In some cases, these rivals may not be able to compete with Apple on price and may be excluded from the App Store, resulting in less choice for consumers. The reduced ability to compete on price may also facilitate tacit collusion where rivals raise their price along with Apple, softening price competition.

Apple’s promotional restrictions on rivals harms competition. Customers are deprived of valuable promotional information that would have otherwise increased their knowledge about

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<sup>120</sup> Nicas, *supra* note 76. On Apple’s standards, its Guidelines state, “We will reject apps for any content or behavior that we believe is over the line. What line, you ask? Well, as a Supreme Court Justice once said, ‘I’ll know it when I see it.’ And we think that you will also know it when you cross it.” *App Store Review Guidelines*, *supra* note 41.

<sup>121</sup> Nicas, *supra* note 76.

<sup>122</sup> Defaults nudge consumers toward the choice desired by the platform, especially when there is inertia or uncertainty in decision making by the consumer.

<sup>123</sup> For example, when a consumer clicks on a website link in a text it always opens in Safari; if they use voice commands through Siri to open up a music streaming app, Apple Music is opened; when they click on a physical address directions on a website, Apple Maps launches. For all these apps, third-party alternatives are available yet it is not possible for the third-party app developer nor the consumers to change the defaults in their app. *See Dutch ACM Study*, *supra* note 8.

<sup>124</sup> For instance, when Spotify still offered the possibility to subscribe, it increased its price from €9.99 a month to €12.99 for a subscription through the App Store, while all other channels charged €9.99 a month. Chris Welch, *Spotify Urges iPhone Customers to Stop Paying Through Apple’s App Store*, VERGE (July 8, 2015, 12:17 PM EST), <https://www.theverge.com/2015/7/8/8913105/spotify-apple-app-store-email>.

alternatives and consequently improved price competition. These restrictions also increase rivals' costs by forcing them to seek other (and likely more expensive) forms of advertising. Limiting rivals' access to data also increases their costs relative to Apple. Apple can learn from the performance of downstream competitors and use this knowledge to improve its own offerings. Rivals cannot. Restrictions on interoperability also increase rivals' costs.

*Features of digital platforms.* This effect of raising rivals' costs is exacerbated in digital platform markets because of network effects, economies of scope/scale, and the ability of platforms to take advantage of consumers' behavioral biases through defaults and framing. These features increase platforms' ability to leverage market power from one market to another and contribute towards the tendency of digital-platform markets to tip towards monopoly.

The example of Spotify and Apple Music illustrates how these features exacerbate the effects of raising rivals' cost on competition, both in the present and the future. By raising Spotify's costs through self-preferencing, Apple Music stands to gain additional users. These additional users are far more valuable than just the extra subscription fee that Apple Music obtains, for several reasons. First, when network effects are present, switching users will increase the value of Apple Music by making it more attractive to other users. In music streaming, we expect network effects because users of the same streaming service can easily share playlists and follow each other. Second, data from users' music streaming behavior can be used to generate revenues in other ways—for example, data can be sold to advertisers or music artists. Finally, Apple benefits from economies of scale in user data that it can use to improve its service. As a result, self-preferencing by Apple hurts rivals both now and in the future. By limiting rivals' access to users, Apple may prevent competitors from achieving the scale they need to be profitable and invest in future innovation.

**Cross-platform competition.** Moreover, by weakening cross-platform apps like Spotify, Apple can deter entry from other smartphone platforms and thereby weaken cross-platform competition. Absent Apple's conduct, an entrant smartphone platform could offer an array of high-quality apps available outside iOS, like Spotify and Facebook. The presence of successful and highly demanded cross-platform apps results in buyers caring less about the underlying operating system when purchasing a smartphone. For example, in China, where WeChat plays a central role in consumers' digital lives, the iOS retention rate is at 50%, almost half of the rate in the U.S. which stands at 89%.<sup>125</sup> A cross-platform app weaker than its Apple counterpart decreases the attractiveness of a new smartphone OS, as the platform depends on indirect network effects from app offerings. This promotes lock-in to iOS. Tellingly, many Apple apps are confined to the iOS platform.<sup>126</sup>

**Consumers' limited attention.** In addition, search-ranking manipulation and default settings are particularly effective in platform markets since consumers tend to focus on the first few search results presented to them and default to one service, a phenomenon known as single-homing. Even if opting for the most visible option is more convenient for some consumers in the short run, the impact on competition may harm consumers with fewer choices, lower quality products, and higher prices in the long run.

**Innovation.** By blocking developers from using certain iPhone technologies like the NFC chip, Apple completely excludes mobile-payments competitors and stymies developers from developing innovative uses for the NFC chip.<sup>127</sup> Moreover, Apple's imitation will likely discourage new apps from innovating because they fear expropriation. The apps that Apple designs

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<sup>125</sup> See *infra* Figure 1.

<sup>126</sup> While currently Apple Music is available on Android, Apple can reverse this decision at any point.

<sup>127</sup> See, e.g., Ben Thompson, *Integration and Monopoly*, STRATECHERY (Nov. 18, 2019), <https://stratechery.com/2019/integration-and-monopoly>.

to supplant them may be of a lower quality and designed to preserve its dominant position.<sup>128</sup> These effects deprive consumers of choice, quality, and innovation.

c. Potential antitrust violations

**1. Microsoft-like monopolization**

Defensive leveraging behavior helps a monopolist extend the life of its primary monopoly by preventing splintering and next-generation substitution. In many ways, the challenge from future platforms to iOS is similar to Netscape’s threat to Windows, where a rising Internet browser could commoditize the PC operating system monopoly Microsoft held by providing web software applications that users desired regardless of the underlying OS.<sup>129</sup> In limiting the rise of future platforms on top of iOS, the effect of Apple’s actions is not unlike that of what Microsoft did around the turn of the century to prolong its PC OS monopoly, which the D.C. Circuit found to be illegal monopolization.<sup>130</sup> This kind of defensive leveraging is a natural and effective weapon for preserving the primary monopoly.<sup>131</sup>

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<sup>128</sup> For example, after blocking a number of screen-time and parental-control apps from the App Store, Apple introduced its own version which required the whole family to own iPhones. Many apps removed by Apple allowed parents with iPhones to control their children’s Android devices. See Nicas, *supra* note 14.

<sup>129</sup> See *United States v. Microsoft Corp.*, 253 F.3d 34, 53, 60 (D.C. Cir. 2001) (en banc) (finding Netscape is “middleware” that exposes its own APIs (interfaces for third-party developers) and “could take over some or all of Windows’s valuable platform functions” which can erode Microsoft’s Windows monopoly, as “[a]pplications written to a particular browser’s APIs . . . would run on any computer with that browser, regardless of the underlying operating system” and consumers would as a result “no longer feel compelled to select Windows.”).

<sup>130</sup> See *id.* at 64, 71, 72, 76-78 (finding series of Microsoft’s restrictive or exclusive agreements with OEMs, internet access providers, independent software vendors, and Apple to limit rival browsers, such as Netscape, as well as its actions to undermine non-Microsoft Java virtual machines—another middleware—“represent uses of Microsoft’s market power to protect its monopoly” over computer operating system or constitute “exclusionary devices,” which “violate § 2 of the Sherman Act”); Robin Cooper Feldman, *Defensive Leveraging in Antitrust*, 87 GEO. L.J. 2079 (1999). While Microsoft relied on external partners to limit the distribution of rival browsers and Java virtual machines, Apple can undermine multi-homing apps and future platforms on its own, thanks to its tight grip over the iOS ecosystem.

<sup>131</sup> Feldman, *supra* note 130.

## 2. Monopoly leveraging

As the only device manufacturer for iOS, Apple leverages this bottleneck position and uses robust vertical integration to move its dominance to adjacent markets.<sup>132</sup> The *Trinko* Court held that for such a leveraging theory to be sustained, the firm must actually monopolize or have a “dangerous probability of success” in monopolizing the second market.<sup>133</sup> Apple’s all-encompassing power to constrain app downloads to the App Store and then control what is offered on the App Store creates a dangerous probability of success.<sup>134</sup>

Even short of probable monopolization, leveraging can still significantly harm competition. There are concerns that such a leveraging theory may sweep too broadly and condemn that which should be viewed as pro-competitive.<sup>135</sup> However, we find that this is a narrow interpretation of the doctrine that is outdated in the digital-platform era as it excludes defensive leveraging and ignores monopolistic leveraging into new dynamic network markets. This can consequently stifle innovation and significantly slow the rise of new platforms regardless of the actual monopolization of these markets. Courts take this conservative approach because they are concerned that allowing monopolistic leveraging as an independent claim of exclusionary conduct “might chill competition, rather than foster it.”<sup>136</sup> This is further buttressed by the largely Chicago School notion that monopoly leveraging as an antitrust theory cannot increase a monopolist’s profits because “a monopolist can take its monopoly profit just once.”<sup>137</sup> The rationale is that unless the monopolist’s leveraging is efficient, it cannot extract additional profit from a second market as

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<sup>132</sup> Thomas Eisenmann et al., *Platform Envelopment*, 32 STRATEGIC MGMT. J. 1270 (2011); Annabelle Gawer & Michael A. Cusumano, *How Companies Become Platform Leaders*, 49 MIT SLOAN MGMT. REV. 28 (2008).

<sup>133</sup> See 540 U.S. 398, 415 n.4 (2004), (citing *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 459 (1993)).

<sup>134</sup> See *supra* Section III.c.3.

<sup>135</sup> Samuel R. Miller, *Is Amazon Violating the Antitrust Laws?*, JUSTIA: VERDICT (July 25, 2019) <https://verdict.justia.com/2019/07/25/is-amazon-violating-the-antitrust-laws>.

<sup>136</sup> See *Spectrum Sports*, 506 U.S. at 458.

<sup>137</sup> See *Schor v. Abbott Laboratories*, 457 F.3d 608, 611 (2006).

buyers pay for the two products as a package.<sup>138</sup> However, the “one monopoly profit” argument is based on special assumptions including static market competitiveness, lack of transaction costs, and fixed proportion usage.<sup>139</sup> These assumptions do not hold in platform economies with strong dynamic network effects where leveraging can effectively alter market power.<sup>140</sup> Due to high switching costs<sup>141</sup> and information costs accruing from limited consumer resources and sophistication, as well as behavioral biases, buyers in platform markets are also unable to comprehensively assess secondary market prices.<sup>142</sup> Owing to the differing nature of infrequent smartphone purchases and more regular app transactions, consumers are unlikely to fully factor in app prices when purchasing a smartphone. Such a leveraging strategy is highly likely given Apple’s aggressive push into services.<sup>143</sup>

### 3. Essential facilities—unreasonable access

Apple’s self-preferencing conduct can give rise to an extension of the essential facilities claim laid out in Section III.C.1. Though Apple’s actions did not totally foreclose rival apps from the App Store, developers were denied “reasonable access” to an essential facility.<sup>144</sup>

Defining “reasonable access” is central to this claim. In 1981, the District Court for the District of Columbia drew on *Terminal Railroad*’s definition of “reasonable access” as requiring the facilities owner to provide “just and reasonable terms and regulations as will, in respect of use, character and cost of services, place every such company upon as nearly as equal plane as may

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<sup>138</sup> See HOVENKAMP, *supra* note 57, at 426, 565.

<sup>139</sup> See Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397, 403-19 (2009).

<sup>140</sup> See *id.* at 413; *supra* Section III.b.

<sup>141</sup> See Introduction.

<sup>142</sup> See Shili Shao, *Antitrust in the Consumer Platform Economy, Part II* (May 11, 2020) (manuscript).

<sup>143</sup> See Introduction.

<sup>144</sup> *Laurel Sand & Gravel, Inc. v. CSX Transp., Inc.*, 924 F.2d 539 (4th Cir. 1991).

be.”<sup>145</sup> The court clarified that this standard did not require “absolute equality of treatment”; rather, consideration of “problems of feasibility and practicability” in determining what was reasonable access was appropriate.<sup>146</sup> But at the very least, raising a claim of unreasonable access requires a court to undertake fact findings to determine whether access was reasonable.<sup>147</sup>

On the specific question of Apple’s 30% charge on App Store transactions, reasonable price turns on magnitude. The case law on this issue is “relatively sparse.”<sup>148</sup> The primary guideposts are the Fourth Circuit’s holding that a railroad’s offer that charged a penny over its variable costs was reasonable,<sup>149</sup> contrasted with the Second Circuit finding that a sudden 800% price increase was sufficient to survive summary judgment.<sup>150</sup> Finding that the 30% tax substantially exceeds Apple’s marginal costs for the platform may help support a finding of “unreasonable access” under *Laurel Sand*.<sup>151</sup>

Apple would likely cast its self-preferencing conduct as reasonable by arguing that its choices create efficiencies for consumers. While monopolists can be excused from sharing their essential facility if they have “legitimate business reasons,”<sup>152</sup> Apple’s likely justifications are insufficient.<sup>153</sup> Beyond undercutting Apple’s purported efficiencies, enforcers can contrast Apple’s conduct with Android’s choices to show that certain practices are not infeasible or

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<sup>145</sup> *United States v. AT&T*, 524 F. Supp. 1336, 1353 (D.D.C. 1981) (quoting *United States v. Terminal R.R. Ass’n*, 224 U.S. 383, 411 (1912)).

<sup>146</sup> *Id.* at 1360-61.

<sup>147</sup> *Trinko*, 294 F.3d at 326 (finding that what constitutes reasonable access is an “issue[] of fact that cannot be resolved on [] motion to dismiss”).

<sup>148</sup> *Delaware & H.R. Co. v. Conrail*, 902 F.2d 174, 180 (2d Cir. 1990).

<sup>149</sup> *Laurel Sand*, 924 F.2d 539, 544-45 (4th Cir. 1991).

<sup>150</sup> *Conrail*, 902 F.2d at 180.

<sup>151</sup> *Conrail* offers less guidance because it discusses a price increase. *Id.* at 177.

<sup>152</sup> *City of Anaheim v. So. Cal. Edison Co.*, 955 F.2d 1373, 1381 (9th Cir. 1992); *Laurel Sand* at 544-45.

<sup>153</sup> *Infra* Section V.

impractical. For instance, Android allows developers to connect to its phones' NFC chip, showing that granting access is possible.<sup>154</sup>

On feasibility, asking Apple to give access to the App Store, iPhone systems, or consumer data would require the court to assume a more regulatory role. But a court would have a standard to use, as they can judge competitors' access against the terms Apple provides to itself and relieve Apple from obligations where sharing would be infeasible or impractical. Further, Apple has shown that some form of shared access on its defaults is possible: it has allowed Clue—a period tracking app—to integrate into its own Health App, which is included in Apple's default package of apps on any iPhone.

#### **4. Constructive refusal to deal**

Apple didn't remove a number of other apps from the App Store when it created its own, free copy-cat offerings that mirrored them, because it didn't need to. Rather, when it added those apps to iOS directly, it achieved largely the same result. Thus, while Apple did not repudiate its longstanding profitable relationships in form, in substance, it all but did so. It walked away from ongoing, commercially beneficial business engagements to roll out free software that generated no revenue. This conduct is in essence the sort of behavior that *Trinko* makes clear is unlawful.<sup>155</sup>

#### **5. Parallels with EU Google Shopping**

Apple's self-preferencing conduct on the App Store, in particular search ranking manipulation, bears similarities to Google's condemned conduct in the EU Google Shopping case. The European Commission fined Google EUR 2.42 billion in June 2017 for abusing its dominant position in the market for search queries to give its price comparison shopping service an illegal

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<sup>154</sup> *Sharing Files with NFC*, ANDROID DEVELOPER, <https://developer.android.com/training/beam-files>.

<sup>155</sup> See *Trinko*, 540 U.S. at 409 (distinguishing case from *Aspen Skiing* by noting that defendant did not terminate a "voluntary (and thus presumably profitable) course of dealing" that suggested a "willingness to forsake short-term profits to achieve an anticompetitive end") (emphasis in original).



advantage over its rivals. According to the Commission, Google’s preferential treatment towards its own comparison shopping services combined with simultaneous demotion of rival services distorted traffic away from competitors and towards Google's own services. The Commission ruled Google’s conduct qualified as a form of leveraging in breach of Article 102(b) TFEU. Google breached Article 102 TFEU in that (i) it leveraged its market power in one market to expand to an adjacent market; (ii) with the potential to foreclose competition in the adjacent market; and (iii) without any objective justification for its conduct.<sup>157</sup> To the extent that Apple has similarly favored the presentation of its own apps in the App Store, its conduct is likely to be in violation of Article 102 TFEU.

## V. BALANCING AGAINST POTENTIAL PROCOMPETITIVE JUSTIFICATIONS

Both tying and monopolization cases consider efficiency justifications.<sup>158</sup> Courts often conduct a balancing test that weighs the harms and benefits of the conduct at issue.<sup>159</sup> Given the complexity of balancing two often highly uncertain and complicated effects, courts employ the Less Restrictive Alternative (LRA) test to simplify the calculus.<sup>160</sup> The LRA test asks whether an alternative exists that achieves the beneficial goal equally well but with less harm.<sup>161</sup>

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<sup>157</sup> *Commission Decision, Case AT.39740 – Google Search (Shopping)*, EUROPEAN COMM’N (June 27, 2017), [https://ec.europa.eu/competition/antitrust/cases/dec\\_docs/39740/39740\\_14996\\_3.pdf](https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf).

<sup>158</sup> *See Int’l Salt Co. v. United States*, 332 U.S. 392, 397-98 (1947) (considering and ultimately rejecting a goodwill defense); *Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 461 (7th Cir. 2020) (supporting a “balancing” test in monopolistic refusal-to-deal cases); *Breaux Bros. Farms v. Teche Sugar Co.*, 21 F.3d 83, 89 (5th Cir. 1994) (finding “procompetitive effect . . . is relevant” for tying analysis); *Metrix Warehouse v. Daimler-Benz A.G.*, 828 F.2d 1033, 1035 (4th Cir. 1987) (considering and rejecting a quality-control defense in finding illegal tying).

<sup>159</sup> *See, e.g., Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 486 (remanding on whether procompetitive effects “outweighed” anticompetitive effects).

<sup>160</sup> *See C. Scott Hemphill, Less Restrictive Alternatives in Antitrust Law*, 116 COLUM. L. REV. 927, 937, 947-55 (2016).

<sup>161</sup> *Id.* at 937.

*IAP tie.* Apple proponents have claimed that only if Apple controls the in-app transaction process can it ensure payment safety and provide a smooth experience.<sup>162</sup> What's more, Apple would then use the proceeds from its 30% tax to promote third-party apps and to support app quality control, development, and distribution. Under this sanguine view, the 30% tax offers integration benefits to both users and developers that are sufficient to offset the harms of higher prices, diminished competition, and suppressed innovation. Applying the balancing and LRA tests suggests, however, that these proclamations ring hollow.

Some easy balancing for certain key apps exposes the weakness of several of these claims. Apple's promotions are clearly inadequate compensation for the 30% tax imposed on prominent apps, such as Netflix and Spotify, that have forged distinct brand identities—they are big enough to attract customers themselves without Apple's help. In fact, prominent app developers have made clear that they would decline Apple's services if given a choice.<sup>163</sup> Moreover, putative security and support benefits offered in exchange for the 30% tax mean little if the extortionate tax threatens the survival of the app in the first place. Small businesses and app studios as well as thin-margin (e.g., subscription) apps are particularly vulnerable.<sup>164</sup>

The supposed efficiency justifications crumble further in the face of three LRAs. First, Apple could actually increase its profits by offering lower fees to the prominent apps, and that it has not done so indicates anticompetitive intent probative of harm. These apps have generated billions of dollars in revenue for Apple—Netflix, for example, was the top grossing app on iOS

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<sup>162</sup> See *Online Platforms and Market Power, Part 2: Innovation and Entrepreneurship: Hearing Before the Subcomm. on Antitrust, Commercial, and Admin. Law of the H. Judiciary Comm.*, 115th Cong. (2018) (statement of Kyle Andeer, Vice President, Corporate Law, Apple); *Addressing Spotify's Claims*, APPLE (Mar. 14, 2019), <https://www.apple.com/newsroom/2019/03/addressing-spotifys-claims>.

<sup>163</sup> For example, Epic Games, the creator of Fortnite, pulled out of the Google Play store and explicitly said it would have done the same for the iOS version of the battle royale game but for Apple's restrictions. See Liz Lanier, *'Fortnite' Avoiding Google Play Store's 30% Cut on Android Version*, VARIETY (Aug. 4, 2018), [variety.com/2018/gaming/news/fortnite-avoiding-google-play-stores-30-cut-on-android-version-1202895335](http://variety.com/2018/gaming/news/fortnite-avoiding-google-play-stores-30-cut-on-android-version-1202895335).

<sup>164</sup> See *supra* notes 48, 54 & 56 and accompanying text.

generating \$853 million in revenue in 2018 just before it exited IAP, which means Apple's 30% share of payments for Netflix services alone amounted to \$256 million in that one year.<sup>165</sup> Requiring a 30% tax that forces major app developers off its payment system seems to make little business sense; Apple would clearly be better off by levying a more acceptable 10% rate on the \$853 million. The fact that Apple's sophisticated management team has chosen to forgo these enormous profits strongly suggests it expects even more gains from restraining these apps.

Second, putative quality control, security, developer support, and promotional efficiencies are not causally related to the IAP tie and are likely to have been provided by Apple even in the absence of the 30% tax associated with the IAP tie. To ensure that the iPhone retains its premium branding, cultivated at great expense, Apple has strong incentives that are *independent* of the use of its IAP system to maintain the quality and security of iPhone apps. Indeed, the Mac App Store remains secure and maintains reasonable quality control by Apple's own account without tying digital goods distribution to the use of its payment system.<sup>166</sup> Similarly, Apple offered quality control, developer support, and app promotions to subscription apps well before it imposed the IAP on them in 2011.<sup>167</sup> Broad-based developer support is a sine qua non for all successful modern software platforms, and such support is routinely offered without an exorbitant 30% tax.<sup>168</sup> In fact, Apple already charges a \$99 annual developer fee for support tools.<sup>169</sup> Promotions are also independently provided through Apple's Search Ads program that advertises apps for a fee when

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<sup>165</sup> Sarah Perez, *Netflix Stops Paying the 'Apple Tax' on Its \$853M in Annual iOS Revenue*, TECHCRUNCH (Dec. 31, 2018), <https://techcrunch.com/2018/12/31/netflix-stops-paying-the-apple-tax-on-its-853m-in-annual-ios-revenue>.

<sup>166</sup> See *Security. Built Right in.*, APPLE, <https://www.apple.com/macOS/security>.

<sup>167</sup> See sources cited *supra* note 63.

<sup>168</sup> See *A New Microsoft Store Revenue Share Is Coming*, MICROSOFT (May 7, 2018), <https://blogs.windows.com/windowsdeveloper/2018/05/07/a-new-microsoft-store-revenue-share-is-coming> (charging a mere 5 percent); *Microsoft Developer*, MICROSOFT, <https://developer.microsoft.com/en-us> (offering support tools).

<sup>169</sup> See *Program Membership Details*, APPLE DEVELOPER, [developer.apple.com/programs/whats-included](https://developer.apple.com/programs/whats-included).

users search for apps, which is expected to generate \$2 billion in 2020.<sup>170</sup> It is thus disingenuous to claim that Apple would not be able to provide these efficiencies without imposing the 30% tax.

Third, the supposed security and ease of use benefits are achievable by giving users and developers choice—they will adopt Apple’s IAP if it does provide value. As the Fourth Circuit has held, if security is the concern, the tying firm “could have required its dealers [or developers in Apple’s case] to inform their customers” of the alternative payment mechanism developers offer and their associated security risks (as Apple already does with Mac apps from third-party sources).<sup>171</sup> Citing the Supreme Court, the Fourth Circuit observed that “any intrinsic superiority of the tied product would convince freely choosing buyers to select it over others, anyway.”<sup>172</sup> This unchosen LRA based on providing information and preserving buyer choice, rather than a forced tie, offers much of the claimed benefit while remaining substantially less restrictive.

***Self-preferencing.*** Whatever quality control or privacy benefits Apple’s restrictions on third-party promotions and data access could provide, users should similarly have the choice. If prominent promotions for Apple apps help launch new products users desire, similar openings should be available to third-party developers (e.g., by auction) who will pay for such services to the extent their apps are valued by users and thus profitable.

## CONCLUSION

Apple has abused its mobile platform dominance in forcing the IAP tie, excluding competitors, and favoring its own apps. In doing so, it has distorted competition both on the iOS

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<sup>170</sup> See Lauren Feiner, *Apple’s App Store Ads Could Be a \$2 Billion Business by 2020, Bernstein Analyst Predicts*, CNBC (Oct. 22, 2018), <https://www.cnbc.com/2018/10/22/apple-app-store-ads-to-be-2-billion-business-by-2020.html>.

<sup>171</sup> *Metrix Warehouse v. Daimler-Benz A.G.*, 828 F.2d 1033, 1041 (4th Cir. 1987).

<sup>172</sup> *Id.* (internal quotation marks omitted) (citing *Times Picayune Publ’g Co. v. United States*, 345 U.S. 594, 605 (1953)).

platform and between mobile platforms, creating considerable harm to consumers worth tens of billions of dollars without nearly commensurate efficiencies. Apple's conduct thus constitutes illegal tying and monopolization in violation of antitrust law.

## FIGURES & TABLES

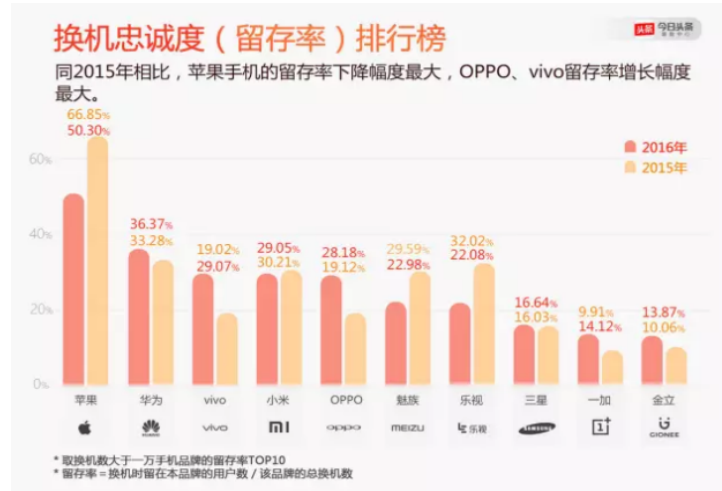


Chart 1: Customer Retention (twelve months ending in each quarter)

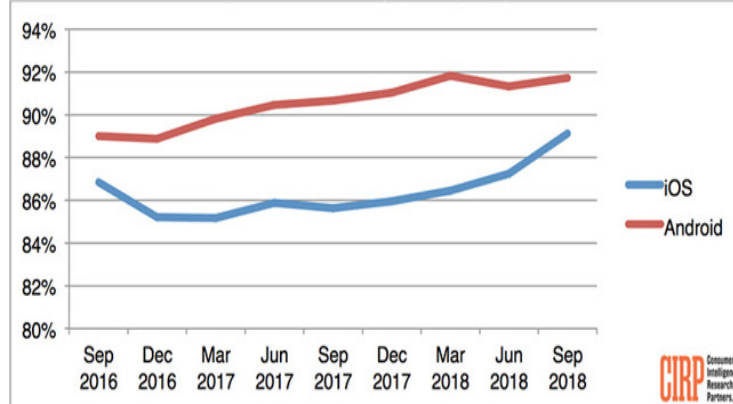


Figure 1: iOS retention rate in China vs. U.S.

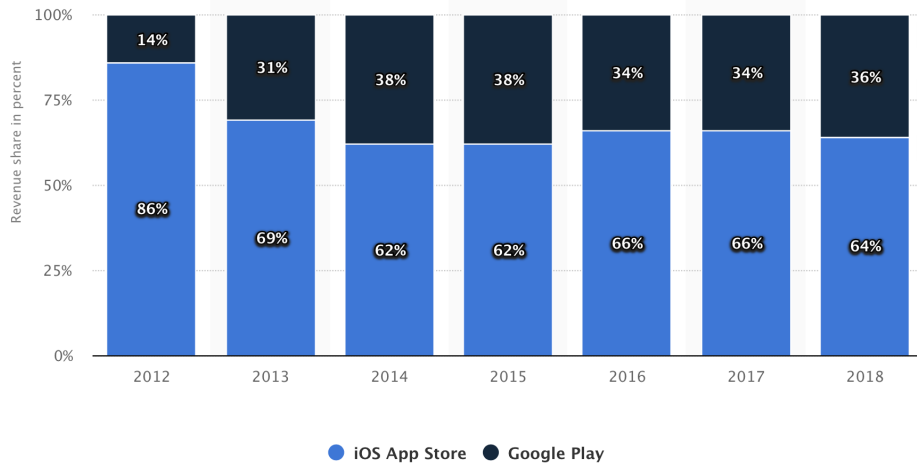


Figure 2: Worldwide Consumer Mobile Spending Market Shares<sup>173</sup>



Figure 3: iPhone Average Selling Price, Sales Volume, and Revenue

<sup>173</sup> *Global Mobile App Sales Revenue Distribution Between the Apple App Store and Google Play from 2012 to 2018*, STATISTA (June 2019), <https://www.statista.com/statistics/259510/revenue-distribution-between-the-apple-app-store-and-google-play>.

	Spotify	Pandora	Tidal	Youtube Music	Apple Music
iOS	\$12.99*	\$12.99	\$12.99	\$12.99	\$9.99
Android	\$9.99	\$9.99	\$9.99	\$9.99	N/A

\*Before Spotify decided to stop allowing in-app subscriptions on iOS altogether in 2016.

Table 1: Music Streaming Subscription Prices on iOS vs. Android



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