

# App Stores, Aftermarkets, & Antitrust

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*App stores have become the subject of controversy and criticism within antitrust. For instance, app developers such as Spotify and Epic Games (creator of Fortnite) allege that Apple's 30% cut of all sales in the App Store violates the antitrust laws and is indicative of monopoly power. The claim is that iPhone users are locked into Apple's walled garden iOS platform, which frees Apple to engage in misconduct in the App Store "aftermarket" to the detriment of users and app developers.*

*This Article challenges the recent economic and legal characterizations of app stores and the nature of the alleged harm. First, this Article builds an accessible, economic framework to illustrate how app stores do not represent the same type of aftermarkets that were condemned in the Supreme Court's landmark Kodak case. Importantly, the differences between Kodak-like aftermarkets and app store aftermarkets raise serious questions whether the digital revival of the aftermarket doctrine conforms with the economic realities of these markets.*

*Second, the complexity of the commercial relationships found in app stores has raised questions regarding who has standing to seek antitrust damages in this type of market setting. This Article provides an overview of the development of the current doctrine of antitrust standing—focusing on Illinois Brick and Pepper. Further, this Article contends that Justice Kavanaugh's opinion in Pepper, which gave iPhone users the right to sue Apple over the 30% commission, was right for the wrong reason. Instead, Justice Gorsuch's dissent offers a much more economically sound approach to antitrust standing—as his "proximate cause" standard does not artificially focus on identifying the "direct purchaser," which is unnecessarily limiting for more complex commercial relationships. As the number of antitrust claims against various app stores proliferate, the consequences of faulty characterizations of app stores will only grow.*

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## INTRODUCTION

Mobile apps are simply a big part of our lives. The average U.S. adult spends three hours and forty-three minutes a day on mobile devices.<sup>1</sup> Apps such as Uber generate billions in consumer surplus annually.<sup>2</sup> King Digital Entertainment, the maker of Candy Crush Saga, is a billion-dollar enterprise.<sup>3</sup> While initially considered an afterthought,<sup>4</sup> mobile marketplaces, or app stores,<sup>5</sup> reached \$111 billion in consumer spending worldwide in 2020, nearly double what was spent merely three years earlier in 2017.<sup>6</sup> To further consider the growth of mobile applications (“apps”), in 2008, the App Store had 500 apps; today, it has 1.85 million.<sup>7</sup> In 2008, when T-Mobile announced the first-ever Google Android phone, it proudly proclaimed that “dozens of unique” apps would be available;<sup>8</sup> as of September 2021, the Google Play Store offers 2.79 million apps.<sup>9</sup> As the economic importance of apps and app stores continues to grow, perhaps it is no surprise that these virtual stores have become the center of controversy and criticism within antitrust—both in

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1. See Rochi Zalani, *Screen Time Statistics 2021: Your Smartphone is Hurting You*, ELITE CONTENT MARKETER (June 2, 2021), <https://elitecontentmarketer.com/screen-time-statistics/> [<https://perma.cc/5LK7-GVNS>].

2. See Peter Cohen et al., *Using Big Data to Estimate Consumer Surplus: The Case of Uber* (NBER Working Paper, Paper No. 22627, 2016), <https://www.nber.org/papers/w22627/> [<https://perma.cc/X6FZ-VWYZ>] (finding the overall consumer surplus across all U.S. cities from Uber was \$6.8 billion in 2015).

3. See, e.g., J. Clement, *Net Revenue Generated by King from 2010 to 2020*, STATISTA (May 5, 2021), <https://www.statista.com/statistics/288974/king-annual-revenue/> [<https://perma.cc/74LC-NWY3>].

4. See, e.g., Stephen Silver, *The Revolution Steve Jobs Resisted: Apple’s App Store Marks 10 Years of Third-Party Innovation*, APPLEINSIDER (July 10, 2018), <https://appleinsider.com/articles/18/07/10/the-revolution-steve-jobs-resisted-apples-app-store-marks-10-years-of-third-party-innovation> [<https://perma.cc/A66Q-KFFD>] (“According to Walter Isaacson’s biography of Jobs, the tech guru was opposed to allowing third-party to run natively on iPhone—and when pressured to do so by developers and others, he had a simple answer: Develop your own web apps that will work on the new platform.”).

5. In this Article, the phrase “app store” is used generically to denote online marketplaces where users can download third-party software. When capitalized, that is, “App Store,” the phrase specifically refers to Apple’s app store.

6. Mansoor Iqbal, *App Revenue Data (2021)*, BUS. OF APPS (Nov. 2, 2021), <https://www.businessofapps.com/data/app-revenues/> [<https://perma.cc/Z29R-S7YK>].

7. Mansoor Iqbal, *App Download and Usage Statistics (2020)*, BUS. OF APPS (Sept. 22, 2021), <https://www.businessofapps.com/data/app-statistics/> [<https://perma.cc/22FM-SNA3>].

8. Press Release, T-Mobile, T-Mobile Unveils the T-Mobile G1—the First Phone Powered by Android (Sept. 22, 2008), <https://www.t-mobile.com/news/press/t-mobile-unveils-the-t-mobile-g1-the-first-phone-powered-by/> [<https://perma.cc/9PNY-5KLS>].

9. L. Ceci, *Number of Available Applications in the Google Play Store from December 2009 to July 2021*, STATISTA (Sept. 23, 2021), <https://www.statista.com/statistics/266210/number-of-available-applications-in-the-google-play-store/> [<https://perma.cc/CHX7-DXHC>].

terms of the nature of the harm and on the question of whether users have standing to sue.

At the vanguard of these allegations are app developers such as Spotify, Epic, and Blix, who have made claims that Apple's App Store policies and practices violate the U.S. antitrust laws and are harming consumers.<sup>10</sup> Entrepreneur Elon Musk has lent his support to developers claiming: "Apple app store fees are a de facto global tax on the Internet. Epic is right."<sup>11</sup> Likewise, users are filing class-action suits alleging harm from the App Store.<sup>12</sup> Google is facing similar litigation over its Google Play policies on Android.<sup>13</sup> Sony is facing a class action suit for establishing its own PlayStation Store as the exclusive distribution channel for all downloads of PlayStation games.<sup>14</sup> Wolfire Games is suing Valve's Steam over its app store commissions and its price parity demands.<sup>15</sup> These complaints have not only caught the attention of antitrust authorities but also legislators. Calls have

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10. *Testimony of Horacio Gutierrez Before the Subcomm. on Competition Pol'y, Antitrust, & Consumer Rts. of the S. Comm. on the Judiciary*, 117th Cong. 3 (Apr. 21, 2021), [https://www.judiciary.senate.gov/imo/media/doc/Final%20Testimony%20of%20Horacio%20Gutierrez\\_Spotify.pdf](https://www.judiciary.senate.gov/imo/media/doc/Final%20Testimony%20of%20Horacio%20Gutierrez_Spotify.pdf) [<https://perma.cc/3QDJ-9C8H>] ("Apple . . . is abusing its complete power over the apps available to owners of Apple devices to hurt consumers."); Complaint for Injunctive Relief, *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR 2021 WL 4128925 (N.D. Cal. Sept. 10, 2021) [hereinafter *Epic Complaint*]; *Blix Inc. v. Apple, Inc.*, No. 19-1869-LPS, 2021 WL 2895654, at \*6 (D. Del. July 9, 2021) (dismissing Blix's claim that Apple's requirement to offer a "Sign In With Apple" option in certain circumstances is anticompetitive because the court concluded that this option increases choice and competition); *see also* Complaint for Violation of the Sherman Act and California Unfair Competition Law, *Cameron v. Apple Inc. (In re Apple iPhone Antitrust Litig.)*, No. 19-cv-03074-YGR, 2021 WL 827234 (N.D. Cal. Mar. 4, 2021).

11. Elon Musk (@elonmusk), TWITTER (July 30, 2021, 9:55 AM), <https://twitter.com/elonmusk/status/1421152540394143746> [<https://perma.cc/58D4-5QGQ>].

12. *See Apple Inc. v. Pepper*, 139 S. Ct. 1514, 1516 (2019).

13. Complaint, *Utah v. Google LLC*, No. 3:21-cv-05227 (N.D. Cal. filed July 7, 2021), 2021 WL 2827564 (complaint brought by thirty-six state attorneys general alleging Google abused its market power over the distribution and sale of apps through the Google Play store).

14. Class Action Complaint, *Caccuri v. Sony Interactive Ent. LLC*, No. 3:21-cv-03361 (N.D. Cal. May 5, 2021) (discussing that the genesis for the litigation was Sony's decision in 2019 to stop allowing gamers to purchase download codes for digital versions of PlayStation games at retailers such as Amazon, GameStop, and Best Buy); *see, e.g.*, Wesley Yin-Poole, *Sony Confirms It Will No Longer Provide Full Game Digital Download Codes to Shops*, EUROGAMER (Mar. 26, 2019), <https://www.eurogamer.net/articles/2019-03-26-sony-confirms-plans-to-stop-giving-shops-full-game-download-codes-to-sell> [<https://perma.cc/8MGZ-PFKE>].

15. Class Action Complaint, *Wolfire Games, LLC v. Valve Corp.*, No. 2:21-cv-563, (W.D. Wash. Apr. 27, 2021), 2021 WL 1658403; *see also* David Rosen, *Regarding the Valve Class Action*, WOLFIRE BLOG (May 6, 2021), <http://blog.wolfire.com/2021/05/Regarding-the-Valve-class-action/> [<https://perma.cc/T8BV-8XG7>] (explaining the decision to litigate was due to Steam's price parity policy which does not allow developers to sell elsewhere at a price lower than on Steam).

been made to Congress to break up Apple,<sup>16</sup> regulate Apple and Google like public utilities,<sup>17</sup> and restrict large platforms from acquiring and competing in certain lines of business generally. State legislators have also proposed App Store regulations to provide more revenue to app developers.<sup>18</sup> Not to be left out, foreign antitrust authorities are also condemning various app store policies.<sup>19</sup> As digital commerce continues to grow and online marketplaces proliferate, the outcomes of these cases and legislative actions will be critical to how software is distributed and the degree of innovation in this growing area of the digital economy.

The embodiment of the complaints against app stores is Epic Games' private antitrust litigation against Apple alleging that the App Store policies violate the Sherman Act, Sections 1 and 2.<sup>20</sup> In a recently decided case, Epic

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16. See H.R. SUBCOMM. ON ANTITRUST, COM. & ADMIN. L. COMM. ON JUDICIARY, 116TH CONG., INVESTIGATION OF COMPETITION IN DIGITAL MARKETS 378–79 (2020) (“[T]he Subcommittee’s investigation uncovered several ways in which Amazon, Apple, Facebook, and Google use their dominance in one or more markets to advantage their other lines of business. . . . To address this underlying conflict of interest, Subcommittee staff recommends that Congress consider . . . structural separation and line of business restrictions.”).

17. *Id.* at 381–90; see also STIGLER CTR. FOR THE STUDY OF THE ECON. & THE STATE, STIGLER COMM. ON DIGIT. PLATFORMS: FINAL REP. 16–21 (2019), <https://www.chicagobooth.edu/-/media/research/stigler/pdfs/digital-platforms---committee-report---stigler-center.pdf> [<https://perma.cc/HU36-55XS>] (recommending various regulatory proposals for large digital platforms). See generally Rosa M. Abrantes-Metz & Albert D. Metz, *Regulating Multisided Platforms? The Case Against Treating Platforms as Utilities*, CPI ANTITRUST CHRON. (2020) (considering the various regulatory proposals and cautioning against the break-up of platforms).

18. For example, Arizona considered a bill that would have forced Apple to allow third-party payment systems on iOS and the App Store. H.R. 2005, 55th Leg., 1st Reg. Sess. (Ariz. 2021), <https://www.azleg.gov/legtext/55leg/1R/bills/HB2005H.pdf> [<https://perma.cc/3GBX-T8QC>] (proposing amendments to Title 18, Ariz. Rev. Stat. Ann., relating to digital application distribution platforms).

19. For instance, the UK’s Competition Market Authority (CMA) has opened its own investigation into Apple’s App Store policies. See S. Shah, *UK Opens Antitrust Probe into Apple’s App Store Policies*, ENGADGET (Mar. 4, 2021), <https://www.engadget.com/uk-apple-antitrust-proble-ios-app-store-policies-105131767.html> [<https://perma.cc/LYE3-8645>]. There is also the Digital Markets Act, which is a legislative proposal in Europe to broadly regulate digital platforms including app stores. See *Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act)*, at 40, COM (2020) 842 final (Dec. 15, 2020), <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM%3A2020%3A842%3AFIN> [<https://perma.cc/9YY2-WYCH>] (finding that a gatekeeper must “allow the installation and effective use of third party software applications or software application stores using, or interoperating with, operating systems of that gatekeeper”).

20. 15 U.S.C. § 1 (“Every contract, combination . . . or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal.”); *Id.* § 2 (“Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any

(creator of the popular game Fortnite) claimed that Apple has illegally gained monopoly power through various exclusionary practices that have limited competition and raised prices to supra-competitive levels.<sup>21</sup> These practices include requiring that all apps on the iPhone be distributed exclusively through the App Store (rather than through third-party app stores); charging an exorbitant 30% commission on all app purchases; requiring all payments be made with Apple Pay; and imposing an anti-steering provision, which prevents developers from advertising alternative distribution channels available to consumers outside of the App Store to make in-app purchases or subscribe to services.<sup>22</sup> While the district court ruled in favor of Apple (except for a finding that the non-steering provision violated California state antitrust laws),<sup>23</sup> Epic has already appealed the decision to the Ninth Circuit.<sup>24</sup> Given this appeal, and coupled with the other pending litigation involving app stores, the fundamental arguments presented by Epic and other developers are still live legal issues.

To make its various Sherman Act claims, Epic needs to prove a relevant market where Apple is a monopolist.<sup>25</sup> Epic achieves this using the antitrust concept of “aftermarkets.”<sup>26</sup> Specifically, Epic asserts there is a relevant antitrust aftermarket involving the distribution and sale of apps through Apple’s mobile operating system (iOS), that is, an “iOS App Distribution Market.”<sup>27</sup> Other cases, commentaries, and reports have also characterized

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other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony.”).

21. *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR-TSH, 2021 WL 4128925, at \*123 (N.D. Cal. Sep. 10, 2021).

22. *Epic Complaint*, *supra* note 10.

23. *Epic Games, Inc.*, 2021 WL 4128925, at \*129.

24. Notice of Appeal, *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR-TSH, 2021 WL 4128925 (N.D. Cal. Sept. 12., 2021) (No. 816).

25. A “relevant market” is a specific legal and economic construct designed to delineate the competitive boundaries—so that courts can reasonably assess the competitive effects of a disputed practice. *See United States v. E. I. Dupont de Nemours & Co.*, 351 U.S. 377, 395 (1956); *Brown Shoe Co. v. United States*, 370 U.S. 294, 324 (1962). *See generally* Jonathan B. Baker, *Market Definition: An Analytical Overview*, 74 *ANTITRUST L.J.* 129, 132 (2007) (providing a review of various economic approaches to delineate relevant markets).

26. Findings of Fact and Conclusions of Law Proposed by Epic Games, Inc. at 40, *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR, 2021 WL 4128925 (N.D. Cal. Sept. 10, 2021) [hereinafter *Epic Findings of Fact*]; *see, e.g.*, Dennis W. Carlton & Michael Waldman, *Competition, Monopoly, and Aftermarkets*, 26 *J.L. ECON. & ORG.* 54, 54 (2009) (“The term aftermarkets refers to markets for complementary goods and services such as maintenance, upgrades, and replacement parts used in conjunction with durable goods.”).

27. *Epic Findings of Fact*, *supra* note 26, at 40 (“As set forth in the following paragraphs, there is a relevant antitrust aftermarket for app distribution on iOS (the ‘iOS App Distribution Market’).”).

app stores as aftermarkets and, consequently, concluded all app store operators are effectively monopolists in these various aftermarkets.<sup>28</sup>

The legal doctrine of aftermarkets entered antitrust jurisprudence in 1992 with the Supreme Court's *Eastman Kodak Co. v. Image Technical Services, Inc.* decision.<sup>29</sup> The case involved high-volume photocopiers and micrographic equipment (which we can label as the "primary market" or "foremarket") and the post-sale servicing of copiers with parts and service (which we can label as the "secondary market" or "aftermarket").<sup>30</sup> The allegation was that Kodak engaged in exclusionary practices in the aftermarket for servicing—even though it did not have market power in the primary market for copiers.<sup>31</sup> Importantly, the Court ruled that a supplier who does not have antitrust market power, or monopoly power,<sup>32</sup> in the primary market can, nonetheless, violate the Sherman Act in the aftermarket.<sup>33</sup> The key to this result is a finding that the primary market customers are locked into the primary product and that there are substantial switching costs to move

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28. See Second Amended Consolidated Class Action Complaint ¶ 66, *Apple Inc. v. Pepper (In re Apple iPhone Antitrust Litig.)*, 846 F.3d 313 (9th Cir. 2017), *aff'd sub nom.* *Apple Inc. v. Pepper*, 139 S. Ct. 1514 (2019), No. 11-cv-06714-YGR-TSH, 2013 WL 6387366 [hereinafter *Pepper Complaint*] ("The existence of competition in the smartphone market between Apple's iPhone and the makers of competing handsets . . . is irrelevant to the relevant market analysis in a Section 2 Sherman Act aftermarket monopolization case, in which the existence or lack of competition in the aftermarket at issue is the only economically meaningful inquiry."); Discovery Order, *Cameron v. Apple Inc. (In re Apple iPhone Antitrust Litig.)*, No. 19-cv-03074-YGR, 2021 WL 827234 (N.D. Cal. Mar. 4, 2021), 2020 WL 5993223, at \*1 ("In Plaintiffs' telling, Apple is a monopolist in an aftermarket for software applications that can be used only on iPhones, and in which competition between Apple and other device manufacturers, operating systems, and app distributors plays no part."); Second Amended Complaint ¶ 347, *Blix Inc. v. Apple, Inc.*, No. 19-cv-1869-LPS, 2021 WL 2895654 (D. Del. July 9, 2021), 2021 WL 2905633 [hereinafter *Blix Second Amended Complaint*] ("Apple has the ability to and does exclude competition in the form the aftermarket for distribution of iOS apps. This exclusion is direct evidence of its monopoly power.").

29. 504 U.S. 451 (1992).

30. *Id.* at 455.

31. See *id.* at 465.

32. The concept of "monopoly power" does not have precise metes and bounds in antitrust; although, in most cases, it does not literally mean one seller. See *id.* at 481 ("Monopoly power under § 2 requires, of course, something greater than market power under § 1."). A general rule of thumb is that a firm with market shares above 50% in a well-defined relevant market has monopoly power. See *Monopolization Defined*, FED. TRADE COMM'N, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/monopolization-defined/> [<https://perma.cc/4NZ4-N38R>]. However, courts have properly distinguished market shares from strict findings of monopoly power. See *W. Parcel Express v. United Parcel Serv. of Am., Inc.*, 190 F.3d 974, 975 (9th Cir. 1999) (finding that although a firm owns a dominate share in the market, it does not possess market power unless there are significant barriers to enter that market); *Harrison Aire, Inc. v. Aerostar Int'l, Inc.*, 423 F.3d 374, 381 (3d Cir. 2005).

33. *Eastman Kodak Co.*, 504 U.S. at 477–79.

to a different primary product.<sup>34</sup> The *Kodak* aftermarket doctrine offers clear benefits for plaintiffs as it establishes a literal monopolist in a relevant market.

Yet, the concept of aftermarkets has both a legal and economic meaning, which are not always the same. While app stores and apps are aftermarkets in an economic sense—that is, complementary products to a primary product purchased after the primary product,<sup>35</sup> they are not the type of aftermarkets ruled on in *Kodak* and subsequent antitrust cases invoking the *Kodak* precedent. In Part I, this Article illustrates, with a simple economic framework, that the aftermarket conditions for app stores are fundamentally different from what could be labeled “maintenance aftermarkets” established in *Kodak*, that is, aftermarkets intended to merely upkeep or functionalize durable goods.<sup>36</sup> Specifically, app store aftermarkets are additive in value while maintenance aftermarkets are not—in that app store aftermarkets increase the value of the primary product, often substantially. In contrast, maintenance aftermarkets are required to keep the original durable good operational.

Furthermore, monopoly prices alleged in some maintenance aftermarkets are not actually possible for app store aftermarkets based on the nature of these markets—namely, (near) zero marginal cost. Consequently, Apple’s 30% commission, or tax, has no impact on the optimal economic price relative to if there was no commission at all.<sup>37</sup> This somewhat astounding result emerges from the fact that Apple’s commission is an ad valorem tax (that is, a tax based on a percentage of the transaction price), which does not impact the optimal price when marginal cost is (near) zero.<sup>38</sup> Thus, even if we consider a more “competitive” 15% commission, the optimal price to app users will remain the same. So, Epic’s claim that users are paying higher prices and harmed by the 30% commission is wrong;<sup>39</sup> although, Epic itself is clearly harmed.

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34. *Id.* at 476–77.

35. *See, e.g.,* Carlton & Waldman, *supra* note 26, at 54.

36. *See, e.g.,* Neil D. Van Dalsem, Comment, *Service (Now) Sold Separately: The Supreme Court Expands the Per Se Prohibition of Tying Arrangements in Eastman Kodak Co. v. Image Technical Services*, 28 TULSA L.J. 817, 818 n.5 (1993) (“A derivative aftermarket is simply a market that is created by the need for support and maintenance of a good sold in a primary market.”).

37. *See* Bruce H. Kobayashi & Joshua D. Wright, *What’s Next in Apple Inc. v. Pepper?: The Indirect-Purchaser Rule and the Economics of Pass-Through*, 2018 CATO SUP. CT. REV. 249, 269 (2019). Kobayashi & Wright’s results are further discussed below. *See* discussion *infra* Section I.C.

38. *See id.* at 254.

39. Epic Findings of Fact, *supra* note 26, at 85 (“Apple’s Conduct Increases the Price of Apps to Consumers.”).

Beyond the nature of the aftermarket, the second major misperception about app stores is the nature of the actual transaction. This classification was the core issue in the Supreme Court's recent decision in *Apple Inc. v. Pepper*, which addressed whether a class of app users have antitrust standing under the Clayton Act, Section 4,<sup>40</sup> to sue Apple over the 30% commission.<sup>41</sup> Apple argued that, under the Court's *Illinois Brick Co. v. Illinois* precedent,<sup>42</sup> only app developers could sue Apple over the 30% commission since app developers are the "direct purchasers" of Apple's services while app users are only "indirect purchasers."<sup>43</sup> The idea is that, since app developers are the ones who set the actual app price, users can only sue app developers. However, in a 5-4 decision, Justice Kavanaugh writing for the majority argued that app users could sue Apple because they "directly purchase" apps from Apple.<sup>44</sup>

In Part II, this Article argues that the direct purchaser interpretation of *Illinois Brick* makes little economic sense as it applies to the facts in *Pepper*. When an entity, in this case, Apple, imposes an excise tax<sup>45</sup>—whether a unit or ad valorem tax—it is impacting both the seller (in this case, an app developer) and the buyer (in this case, an app user) concurrently. For instance, if a local government imposes a 5% sales tax on all grocery products, who is the party directly impacted by the economic policy? Economic theory clarifies that both buyers and sellers are conceptually affected—even if, under certain circumstances, the burden is borne either completely by the buyer or seller.<sup>46</sup> In the same way, Apple's 30% ad valorem tax on all App Store transactions directly impacts the net purchase price of both parties. As discussed earlier, it turns out, in this case, that the burden is borne entirely by app developers because of the zero marginal cost to sell an additional unit of output. Nonetheless, this does not change the conceptual point that both buyers and sellers should have the standing to sue—even if, in a particular case, one of the parties is ultimately not negatively impacted. Thus, while the Court ultimately and properly found that app users have standing, the Court was right for the wrong reason. In contrast, the dissent's "proximate cause"

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40. 15 U.S.C. § 15 (provides treble damages to "any person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws.").

41. 139 S. Ct. 1514, 1519 (2019).

42. 431 U.S. 720 (1977).

43. See *Pepper*, 139 S. Ct. at 1519.

44. *Id.*

45. See, e.g., *Excise Tax*, INTERNAL REVENUE SERV., <https://www.irs.gov/businesses/small-businesses-self-employed/excise-tax/> [<https://perma.cc/GWN2-FSMG>] ("Excise taxes are taxes that are imposed on various goods, services and activities. Such taxes may be imposed on the manufacturer, retailer or consumer, depending on the specific tax.").

46. See Section II.B for a full discussion of these exceptions.



interpretation of *Illinois Brick* is more in line with the economic realities found in *Pepper*—although the dissent also incorrectly characterized the nature of app store transactions, which led them to improperly conclude that app users do not have standing.<sup>47</sup>

Ultimately, as cases involving app store aftermarkets proliferate, understanding the economic nature of app stores becomes increasingly critical. Falsely condemning procompetitive behavior or falsely permitting anticompetitive behavior can have severe implications on innovation in this emerging digital commerce channel. Based on the current trajectory, it would not be a surprise to see the Supreme Court rule on these substantive antitrust issues involving *Kodak* and aftermarkets within the next few years.

### I. THE APPLICABILITY OF THE AFTERMARKET DOCTRINE TO APP STORES

Aftermarkets occupy a strange space in antitrust. They represent a particular construct of “markets” that is not based on *ex ante* substitution but a lack of *ex post* options. Thus, the idea of antitrust aftermarkets explicitly recognizes that consumers can become “locked in” to a particular durable good, and, consequently, they can be subject to *ex post* opportunism on complementary goods and services needed to maintain or operationalize the durable good. This idea is consistent with a body of research pioneered by economists Benjamin Klein and Oliver Williamson involving firms’ potential to hold up locked-in buyers.<sup>48</sup> They find, for instance, that once two parties enter into a contractual arrangement that involves product-specific investments, there is a fundamental “transformation” in the relationship.<sup>49</sup> Specifically, the relationship moves from one characterized by *ex ante* competition to one with the potential for *ex post* opportunism.<sup>50</sup> Of course, anticipating this, some mechanisms mitigate the degree of *ex post* opportunism—including reputational concerns, vertical controls, and vertical integration.<sup>51</sup>

This idea of lock-in is central to the aftermarket doctrine that arose out of *Kodak*, which Section I.A details. With this background, Section I.B then

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47. *Pepper*, 139 S. Ct. at 1526 (2019) (Gorsuch, J., dissenting).

48. See, e.g., Benjamin Klein et al., *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978); Oliver E. Williamson, *Transaction-Cost Economics: The Governance of Contractual Relations*, 22 J.L. & ECON. 233 (1979).

49. Klein et al., *supra* note 48, at 298.

50. Given that all contracts are incomplete to one degree or another, each party has some ability to take advantage of the other. See, e.g., Williamson, *supra* note 48, at 241.

51. Klein et al., *supra* note 48, at 325.

specifies the nature of the App Store and the use of aftermarkets in *Epic Games, Inc. v. Apple Inc.* and *Pepper*. The focus is on identifying similarities and differences relative to aftermarkets considered in *Kodak* and subsequent appellate cases. Finally, Section I.C explicitly compares what is labeled “maintenance aftermarkets” (e.g., *Kodak*) with “additive aftermarkets” (e.g., *Epic, Pepper*) using a simple economic framework. The primary takeaway is that the antitrust aftermarket doctrine established in *Kodak* does not readily apply to aftermarkets that increase the value of the overall “system,” such as app stores.

### A. *Kodak and the Aftermarket Doctrine*

#### 1. The Origin Story of Aftermarkets

The aftermarket doctrine arose out of *Eastman Kodak Co. v. Image Technical Services, Inc.*<sup>52</sup> The Supreme Court’s landmark decision established the proposition that complementary products, such as parts and repair services that are purchased subsequent to a primary product, can be considered an “aftermarket.”<sup>53</sup> This doctrine allows for a primary product supplier with no monopoly power, acting unilaterally, to fall under Sherman Act scrutiny. How does the aftermarket doctrine accomplish this? It is through the recognition that the primary product supplier can have some degree of monopoly power over its own “locked-in” customers after they purchase the primary product.<sup>54</sup> This lock-in means that the supplier can anticompetitively exploit customers in the aftermarket.

Specifically, the *Kodak* case involved high volume photocopiers (as well as micrographic equipment) and the associated post-sale parts and service.<sup>55</sup> Kodak supplied photocopiers in what the Court conceded was a competitive primary market.<sup>56</sup> Yet, the allegation was that Kodak cut off post-sale competitors, the independent service organizations (ISOs), in the service and

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52. 504 U.S. 451, 451 (1992); see also Carl Shapiro & David J. Teece, *Systems Competition and Aftermarkets: An Economic Analysis of Kodak*, 39 ANTITRUST BULL. 135, 139 (1994) (“*Kodak* may be the first occasion in which the Supreme Court has explicitly used the term ‘aftermarket.’”).

53. *Eastman Kodak Co.*, 504 U.S. at 470.

54. See *id.* at 481–83.

55. *Id.* at 455.

56. *Id.* at 471 (“Thus, contrary to Kodak’s assertion, there is no immutable physical law—no ‘basic economic reality’—insisting that competition in the equipment market cannot coexist with market power in the aftermarkets.”).

repair aftermarket.<sup>57</sup> Kodak achieved this by withholding needed parts from ISOs and also pressuring third-party manufacturers of parts to do the same.<sup>58</sup> This left the ISOs in a disadvantaged position and was effectively a method to raise the costs of these rivals.<sup>59</sup> The service providers claimed Kodak's restrictions and policies were both a Sherman Act, Section 1 violation (attempting to leverage Kodak's market power over locked-in customers to the aftermarket through an illegal tie of proprietary parts and the service aftermarket) and a Section 2 violation (attempting to monopolize the aftermarket through conduct designed to foreclose ISOs).<sup>60</sup>

In ruling against Kodak and denying summary judgment, the Court's logic rested on the notion of locking in consumers after they purchase the primary product.<sup>61</sup> The lock-in is due to switching costs that hinder the ability of Kodak consumers to easily switch to alternative photocopiers, which allows Kodak to exploit these customers in the service aftermarket.<sup>62</sup> Thus, while there may be an ability to substitute *ex ante* in the primary market, there may be little ability to substitute *ex post* after being locked in.

Overall, the *Kodak* decision provided a path for plaintiffs to establish a relevant antitrust market that has only a single firm, that is, a literal "monopolist." This decision is critical because, for monopolization cases, plaintiffs need to establish a relevant market that is being monopolized.<sup>63</sup> Normally, relevant markets are determined by identifying "reasonably interchangeable" substitutes and, if the data is available, estimating cross-price elasticities.<sup>64</sup> Tools to delineate markets are further expanded upon with

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57. *Id.* at 458.

58. *Id.*

59. *Id.* ("Kodak intended, through these policies, to make it more difficult for ISO's to sell service for Kodak machines."). See generally Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs To Achieve Power Over Price*, 96 YALE L.J. 209 (1986).

60. *Eastman Kodak Co.*, 504 U.S. 451 at 459.

61. See *id.* at 486.

62. See, e.g., Joseph Farrell & Paul Klemperer, *Coordination and Lock-In: Competition with Switching Costs and Network Effects*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 1967, 1977 (Mark Armstrong & Robert H. Porter, eds., 2007) ("A consumer faces a *switching cost* between sellers when an investment specific to his current seller must be duplicated for a new seller.").

63. *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966) ("The offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident."); see *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 459 (1993) (affirming that Sherman Act, Section 2 claims cannot be brought absent proof of a relevant market).

64. *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 395, 400 (1956). Cross-price elasticities measure the percentage relationship between the price of one good and the quantity change of another good.

the various *Brown Shoe Co. v. United States* factors<sup>65</sup> and the hypothetical monopolist test.<sup>66</sup> Yet, all these methods to define the relevant market for the primary market are not required to establish a relevant aftermarket. Rather, an aftermarket can constitute a relevant market for antitrust purposes by the mere fact that it is a complement to a primary product, and there is some degree of consumer lock-in that prevents these consumers from easily switching to a substitute primary product.<sup>67</sup> Further, if the primary product supplier completely controls the aftermarket, then the plaintiff has established a single-firm relevant market.<sup>68</sup>

After a single-firm relevant market has been established, plaintiffs can use this fact in several ways. First, and most directly, it can be used to bring a Section 2 monopolization case in the aftermarket—irrespective of the competitive conditions in the primary market.<sup>69</sup> In *Kodak*, the primary market was competitive.<sup>70</sup> In other cases, the primary market could be a monopoly.<sup>71</sup> Although, this begs the question, why would a plaintiff need to assert a monopoly in the aftermarket if it can instead establish a monopoly in the primary market? The answer is that the antitrust label “monopoly” encompasses a range of market power, which typically falls well short of a literal single seller.<sup>72</sup> The advantage of an aftermarket is that it can establish

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65. 370 U.S. 294, 343–45 (1962).

66. U.S. DEP’T OF JUST. & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 4.1.1 (2010).

67. One could technically adopt a variation of the hypothetical monopolist test tailored to an aftermarket. See Organisation for Economic Co-operation and Development [OECD], *Competition Issues in Aftermarkets – Note from the United States*, ¶ 13, DAF/COMP/WD(2017)38 (June 21–23, 2017), <https://www.ftc.gov/system/files/attachments/us-submissions-oced-2010-present-other-international-competition-fora/aftermarkets.pdf> [<https://perma.cc/3FP9-PZM7>] (“[I]f a profit-maximizing hypothetical monopolist of an aftermarket (that is not a monopolist in the foremarket) would raise prices by at least a small but significant and non-transitory amount, then foremarket competition is not sufficient to prevent against anticompetitive behavior in the aftermarket.”).

68. *Id.* ¶ 7.

69. See Class Action Complaint ¶ 50, *Caccuri v. Sony Interactive Ent. LLC*, No. 3:21-cv-03361 (N.D. Cal. filed May 5, 2021) (bringing a Section 2 claim based on the fact that “each console creates a separate aftermarket for games that can be played on it. Games that cannot be played on the same console are not substitutable”).

70. *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 471 (1992).

71. See, e.g., *Shapiro & Teece*, *supra* note 52, at 140 (“Certainly, equipment and service markets can both be competitive (telephones, fax machines); or both can be monopolized, either by the same firm or by separate firms.”); see also Written Direct Testimony of Dr. David S. Evans ¶¶ 118–19, *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR, 2021 WL 4128925 (N.D. Cal. Sept. 10, 2021) [hereinafter *Evans Testimony*] (asserting that the primary market of smartphone operating systems is not competitive and, consequently, cannot discipline the aftermarket for iOS app distribution).

72. See *Eastman Kodak Co.*, 504 U.S. at 481–82.

a single-seller in a relevant market—which makes life considerably easier to bring a Sherman Act case.<sup>73</sup> Additionally, one theory of harm is that monopolizing the aftermarket is intended to protect a vulnerable monopoly in the primary market.<sup>74</sup>

Second, plaintiffs can use a single-firm relevant market (that is, the aftermarket) to bring a Section 1 tying case based on a leveraging theory of harm.<sup>75</sup> Leveraging is an ancient antitrust idea and is premised on extending market power from one market (the “tying market”) to another related market (the “tied market”).<sup>76</sup> However, to use a leveraging theory, several conditions must hold. First, there must be two relevant product markets: a tying market and a tied market.<sup>77</sup> Establishing an aftermarket satisfies this condition—as the primary product is the tying market, and the aftermarket is the tied

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73. For instance, in *Epic*, Apple’s economic expert, Dr. Richard Schmalensee, contests Apple’s market share in the primary market—with the obvious intent to chip away at the allegation of market power in the primary market. See Written Direct Testimony of Richard Schmalensee, Ph.D. ¶ 15, *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR, 2021 WL 4128925 (N.D. Cal. Sept. 10, 2021) [hereinafter Schmalensee Report] (“Properly calculated, Apple’s market share is certainly below 40 percent and arguably below 30 percent. Moreover, online platforms with strong indirect network effects and low barriers to entry can experience rapid changes in market share, so a high market share would not imply durable market power.”).

74. See, e.g., Dennis W. Carlton & Michael Waldman, *The Strategic Use of Tying To Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON. 194, 194 (2002) (“[W]e show how a firm that is currently a monopolist in its primary market can use tying of a complementary product to preserve its monopoly position by deterring future entry into the primary market.”). Prominently, this theory was used in *United States v. Microsoft Corp.*, 253 F.3d 34, 70 (D.C. Cir. 2001) (“In this case, plaintiffs allege that, by closing to rivals a substantial percentage of the available opportunities for browser distribution, Microsoft managed to preserve its monopoly in the market for operating systems.”).

75. The Court in *Kodak* appeared to endorse this view. See *Eastman Kodak Co.*, 504 U.S. at 479 n.29 (explaining that “[t]he Court has held many times that power gained through some natural and legal advantage such as a patent, copyright, or business acumen can give rise to liability if ‘a seller exploits his dominant position in one market to expand his empire into the next’” (citing *Times-Picayune Publ’g Co. v. United States*, 345 U.S. 594, 611 (1953))).

76. See *Henry v. A.B. Dick Co.*, 224 U.S. 1, 71–73 (1912) (one of the earliest tying cases, which found tying to be legal); see also Joseph P. Bauer, *Antitrust Implications of Aftermarkets*, 52 ANTITRUST BULL. 31, 32 (2007) (“The multiple strategies that sellers of certain products or services have used in attempts to extend their market power into adjacent or secondary markets doubtless have a lineage extending back for centuries.”). A recent example is *Blix*. See *Blix Inc. v. Apple, Inc.*, No. 19-1869-LPS, 2021 WL 2895654, at \*5 (D. Del. July 9, 2021) (“Blix points to the tying product as iOS, within the mobile OS market. The tied product is Sign In With Apple, in the consumer SSO [single-sign on] market.” (citing *Blix Second Amended Complaint*, *supra* note 28, ¶ 360)).

77. See *Jefferson Par. Hosp. Dist. v. Hyde*, 466 U.S. 2, 13–14 (1984) (establishing that, in order to apply a per se condemnation of tying, there must be market power in the tying market because there are efficiency justifications for tying).

market.<sup>78</sup> Second, there must be market power in the tying market—otherwise, there is nothing to leverage.<sup>79</sup> Establishing an aftermarket can satisfy this condition in many ways. The most straightforward scenario is when there is already market power in the primary market, which implies consumers have limited options—irrespective of the degree of lock-in.<sup>80</sup> The trickier scenario is when there is no market power in the primary market, requiring *Kodak*-like lock-in arguments. In this latter scenario, the market power is not over the *ex ante* customers, who have options, but the *ex post* customers, who are locked in. Under either scenario, aftermarket leveraging is based on taking the market power in the primary market, whether due to a lack of *ex ante* options or *ex post* lock-in and leveraging it into an aftermarket. Of course, this potential for anticompetitive harm must be weighed against the potential efficiency justifications for tying.<sup>81</sup> There are also price discrimination rationales for tying that do not necessarily result in clear welfare losses for consumers.<sup>82</sup>

## 2. The Aftermath of *Kodak*

Before turning specifically to the App Store aftermarket in the following Section, a review of *Kodak* and subsequent appellate court decisions reveal a

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78. See, e.g., Organisation for Economic Co-operation and Development [OECD], *supra* note 67, ¶ 13 (“In the context of aftermarkets, a key question regarding product market definition is whether the aftermarket constitutes a relevant product market separate from the foremarket.”).

79. The Supreme Court established this requirement in *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, which, again, chipped away at the per se condemnation of tying arrangements. 547 U.S. 28, 31 (2006). See generally Bruce H. Kobayashi, *Spilled Ink or Economic Progress? The Supreme Court’s Decision in Illinois Tool Works v. Independent Ink*, 53 ANTITRUST BULL. 5, 8 (2008).

80. See, e.g., Dennis W. Carlton & Michael Waldman, *Upgrades, Switching Costs and the Leverage Theory of Tying*, 122 ECON. J. 675, 676 (2011) (demonstrating that a monopolist can have an incentive to extend its monopoly power into a complementary market such as product upgrades). There are similar arguments made in the context of digital platforms; Lina M. Khan, *What Makes Tech Platforms So Powerful?*, PROMARKET (Apr. 5, 2018), <https://promarket.org/2018/04/05/makes-tech-platforms-powerful/> [<https://perma.cc/KF8G-88Q5>] (“[P]latforms not only serve as critical infrastructure, but are also integrated across markets. This enables a platform to leverage its platform dominance to establish a position in a separate or ancillary market.”).

81. See, e.g., Keith N. Hylton & Michael A. Salinger, *Tying Law and Policy: A Decision-Theoretic Approach*, 69 ANTITRUST L.J. 469, 508 (2001) (arguing that tying should be considered under a rule of reason analysis); Patrick F. Todd, *Digital Platforms and the Leverage Problem*, 98 NEB. L. REV. 486, 489 (2019) (discussing procompetitive justifications for digital platforms to enter and operate in adjacent markets); Laure Schulz, *The Economics of Aftermarkets*, 6 J. EUR. COMPETITION L. & PRAC. 123, 127–28 (2015) (discussing efficiency gains from protecting aftermarkets).

82. See, e.g., Benjamin Klein, *Market Power in Aftermarkets*, 17 MANAGERIAL & DECISION ECON. 143, 153 (1996).

number of common characteristics of aftermarkets and themes that are worth considering when examining the aftermarket claims regarding app stores. First, the primary product must be a durable good—otherwise, there is no sense of having complementary products purchased in subsequent periods.<sup>83</sup> Second, the aftermarket is typically service and parts to maintain and upkeep the primary good or complements needed to operationalize the primary good such as ink for copiers.<sup>84</sup> Third, unless the primary market is a monopoly, there must be some degree of consumer lock-in that is substantial,<sup>85</sup> unanticipated,<sup>86</sup> and not embodied in the price of the primary good.<sup>87</sup> Fourth,

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83. The exception is that we can consider a franchise as the primary market and the various supplies the franchisee purchases from the franchisor as the aftermarket. *See* Bauer, *supra* note 76, at 35 (“[M]ost discussion of aftermarkets involves a durable good as the primary product, and something like a component or replacement part as the secondary product. But, aftermarket issues also arise in franchise relationships.”).

84. *E.g.*, *Newcal Indus., Inc. v. Ikon Off. Sol.*, 513 F.3d 1038, 1048 (9th Cir. 2008) (involving post-sale servicing, which the court explicitly analogized to the facts in *Kodak*); *Harrison Aire, Inc. v. Aerostar Int’l, Inc.*, 423 F.3d 374, 381 (3d Cir. 2005), *cert. denied*, 547 U.S. 1020 (2006) (involving replacement fabric for hot air balloons); *Parts & Elec. Motors, Inc. v. Sterling Elec., Inc.*, 866 F.2d 228, 233 (7th Cir. 1988) (involving replacement parts for electric motors); *Roy B. Taylor Sales, Inc. v. Hollymatic Corp.*, 28 F.3d 1379, 1383 (5th Cir. 1994) (involving hamburger patty paper and hamburger machines). *See generally* Herbert Hovenkamp, *Market Power in Aftermarkets: Antitrust Policy and the Kodak Case*, 40 UCLA L. REV. 1447, 1447 (1993) (writing in the wake of the *Kodak* decision: “Much of American manufacturing consists of durable mechanical and electronic goods that require ongoing maintenance after they are sold. . . . For this reason, many manufacturers of such equipment are actively involved in providing maintenance services.”).

85. *E.g.*, *DSM Desotech Inc. v. 3D Sys. Corp.*, 749 F.3d 1332, 1347 (Fed. Cir. 2014) (finding that there were not enough locked-in customers to establish antitrust harm); *see also* Schulz, *supra* note 81, at 124 (“The key-criteria to assess whether the primary market exerts a competitive pressure on the secondary market are . . . [t]he degree of lock-in of users in a system once they have bought the primary product impacts the extent of possible switching if prices increase too much on the secondary markets.” (emphasis omitted)).

86. *E.g.*, *Avaya Inc., RP v. Telecom Labs, Inc.*, 838 F.3d 354, 401 (3d Cir. 2016) (“We thus characterized *Kodak* as concerned largely with the threat of unfair surprise for customers in the aftermarket, a threat ameliorated if the aftermarket terms were made clear in a primary market contract.”); *see also* Shapiro & Teece, *supra* note 52, at 150 (“[T]he discussion of market power in aftermarkets is properly restricted to policy changes that are imposed unexpectedly on a captive installed base.”).

87. *E.g.*, *Queen City Pizza, Inc. v. Domino’s Pizza, Inc.*, 124 F.3d 430, 443 (3d Cir. 1997) (“If Domino’s had market power in the overall market for pizza dough and forced plaintiffs to purchase other unwanted ingredients to obtain dough, plaintiffs might possess a valid tying claim. But where 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.”). Relatedly, the Supreme Court has long recognized the legitimacy of suppliers offering clear up-front terms to consumers as opposed to the potential illegitimacy of suppliers engaging in some degree of opportunism after the initial sale. For instance, while minimum resale price maintenance (RPM) was long considered to be per se illegal after the *Dr. Miles Med. Co. v.*

there must be no viable substitute for the primary supplier's aftermarket product.<sup>88</sup> Fifth, merely charging higher prices in the aftermarket does not qualify for an antitrust violation. The aftermarket monopolist must "willfully" alter the competitive process in such a manner that lowers consumer welfare.<sup>89</sup> This standard can be satisfied, for instance, through a change in policy that is intended to exclude rivals for the sole purpose of raising prices on consumers.<sup>90</sup> Thus, if Kodak always had a policy of requiring proprietary parts and service for its photocopiers, then there would be no antitrust issue as consumers would have complete information available to them when making their initial purchase decisions.<sup>91</sup> Arguably, even raising the aftermarket price would not satisfy the *Kodak* conditions because changing prices is not necessarily changing the competitive process.<sup>92</sup>

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*John D. Park & Sons Co.* decision in 1911, the Court allowed a "Colgate exception" (instituted eight years after *Dr. Miles*) if the RPM policy was offered as a "take it or leave it" offer up-front. See *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373, 412 (1911), *overruled by* *Leegin Creative Leather Prods. v. PSKS, Inc.*, 551 U.S. 877 (2007); *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919).

88. *E.g.*, *Virtual Maint., Inc. v. Prime Comput., Inc.*, 11 F.3d 660, 664 (6th Cir. 1993) (concluding that the defendant Prime Computer lacked monopoly power in the aftermarket involving support for the CAD/CAM software industry in general).

89. See *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966); see also *Newcal Indus.*, 513 F.3d at 1050 ("The allegation here is that IKON is, like Kodak, exploiting its unique position—its unique contractual relationship—to gain monopoly power in a derivative aftermarket in which its power is not contractually mandated."); Schulz, *supra* note 81, at 125 ("[T]he dominant firm on the aftermarket may seek to limit the number of suppliers on the secondary markets through technical incompatibility or contractual obligations.").

90. *E.g.*, *Newcal Indus.*, 513 F.3d at 1043 (alleging that the defendant defrauded customers by amending their aftermarket service contracts without disclosing this would lengthen the original agreement, which is detrimental to aftermarket competitors).

91. Justice Scalia highlighted this point in his dissent. See *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 491 (1992) (Scalia, J., dissenting) (arguing that Kodak's conduct would not be condemned "had Kodak—from the date of its market entry—consistently pursued an announced policy of limiting parts sales in the manner alleged in this case, so that customers bought with the knowledge that aftermarket support could be obtained only from Kodak"); see also *Harrison Aire, Inc. v. Aerostar Int'l, Inc.*, 423 F.3d 374, 384 (3d Cir. 2005) (finding that a hot air balloon manufacturer's policy that required buyers to use the manufacturer's replacement fabric did not violate the antitrust laws because the buyer knowingly entered into competitive primary market by purchasing manufacturer's balloon, precluded buyer's claim that manufacturer engaged in monopolistic practices in the replacement fabric market).

92. See *Eastman Kodak Co.*, 504 U.S. at 464–66. An exception would be the theory of predatory pricing, where the goal is to price below cost in order to drive out rivals and then, later, recoup those costs through monopoly pricing. There are several shortcomings in applying this theory, however, including the need to also somehow prohibit those competitors who exited from reentering after prices are increased to monopoly levels.



Notably, since *Kodak*, the impact of the aftermarket doctrine has been limited.<sup>93</sup> Indicative of this, the Supreme Court inexplicably avoided even citing its own *Kodak* precedent when it ruled in *Illinois Tool Works v. Independent Ink, Inc.*, which involved similar aftermarket issues.<sup>94</sup> As a result, the federal antitrust agencies generally do not bring aftermarket cases.<sup>95</sup>

Yet, reports of *Kodak's* demise are perhaps greatly exaggerated—as there has been a digital revival of *Kodak*.<sup>96</sup> Larger platforms are considered able to leverage their primary market power into various aftermarkets. Smaller platforms are considered able to leverage their locked-in users for later exploitation in aftermarkets. The following Section explores these aftermarket theories specifically for Apple's App Store. The Supreme Court's near three-decade streak of not revisiting aftermarkets could come to an end if *Epic* or *Pepper* (this time on the antitrust substance) reaches the highest court. Both plaintiffs have clearly invoked the aftermarket doctrine.<sup>97</sup> However, one of the challenges that courts will face is that app stores have some key differences from the aftermarkets described in *Kodak* and subsequent appellate cases.

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93. See, e.g., Organisation for Economic Co-operation and Development [OECD], *supra* note 67, ¶ 15 (“Since the *Kodak* case, however, few plaintiffs have prevailed on aftermarket claims, and the legacy of the *Kodak* decision has been modest.”); David A.J. Goldfine & Kenneth M. Vorrasi, *The Fall of the Kodak Aftermarket Doctrine: Dying a Slow Death in the Lower Courts*, 72 ANTITRUST L.J. 209, 209 (2004) (“After thoroughly surveying the subsequent case law, we have found few cases in which the plaintiff has survived summary judgment involving *Kodak*-style lock-in claims.”).

94. See Kobayashi, *supra* note 79, at 25; *Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 45–46 (2006).

95. See Organisation for Economic Co-operation and Development [OECD], *supra* note 67, ¶ 5 (“In recent years, the U.S. antitrust agencies have not challenged OEM use of unilateral aftermarket restrictions on products or services, in the absence of actual lessening of competition for locked-in customers. This approach aligns with jurisprudence in the United States, which has narrowed the scope of liability for aftermarket restraints since the . . . 1992 *Kodak* decision.”).

96. See *The Kodak Revival*, WOLFF OLINS, <https://www.wolffolins.com/views/the-kodak-revival/> [<https://perma.cc/8QTK-SY2V>].

97. See *Epic Findings of Fact*, *supra* note 26, at 1 (“Apple’s core argument, to which it returns repeatedly, is that neither the law nor facts supports defining markets downstream from a single brand—here, Apple’s iOS. This is factually incorrect and misstates the law. In *Eastman Kodak Co.*, the Supreme Court recognized that, while cases of such single-brand product markets may not be common, they do indeed occur.” (citing *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 481–82 (1992))); *Pepper Complaint*, *supra* note 28, ¶ 3 (“Unbeknownst to iPhone consumers, however, from the time it launched the iPhone through the present date, Apple has engaged in an anticompetitive scheme to monopolize the aftermarket for iPhone applications in order to control and derive supracompetitive profits from the distribution of iPhone apps worldwide.”).

### B. *Apple's App Store*

Apple launched the App Store on July 10, 2008,<sup>98</sup> almost one year after introducing the iPhone on June 29, 2007.<sup>99</sup> The App Store represented, by all accounts, an innovative and closely controlled delivery of first-party and third-party software for mobile devices.<sup>100</sup> At the time of the launch, in 2008, Apple's market share in the U.S. for mobile operating systems was approximately 15%.<sup>101</sup> Today, Apple's U.S. share has grown to over 45%.<sup>102</sup>

Since its inception, distribution through the App Store involved a transaction fee of 30% for paid apps, which, with a few notable exceptions, has remained the same since.<sup>103</sup> In contrast to Google's Android, Apple chose to integrate the hardware and software for its mobile devices vertically. This policy is consistent with Apple's early philosophy of maintaining strict "vertical controls" or governance policies over the iPhone, including over app

98. See, e.g., Jason Snell & Peter Cohen, *Apple Opens iTunes App Store*, MACWORLD (July 9, 2008, 10:27 PM), [https://www.macworld.com/article/1134380/app\\_store.html/\[https://perma.cc/6235-BK9Y\]](https://www.macworld.com/article/1134380/app_store.html/[https://perma.cc/6235-BK9Y]) ("At launch the App Store included 552 apps, including 135 free programs.").

99. See Ed Pilkington & Bobbie Johnson, *iPhone Causes Big Apple Swarm in Big Apple Storms*, GUARDIAN (June 29, 2007, 2:54 PM), [https://www.theguardian.com/news/2007/jun/29/usnews.apple/\[https://perma.cc/Z2Z4-PE35\]](https://www.theguardian.com/news/2007/jun/29/usnews.apple/[https://perma.cc/Z2Z4-PE35]).

100. See, e.g., Seth Weintraub, *Apple's Biggest Innovation for 2008? the iPhone App Store*, COMPUTERWORLD (Aug. 7, 2008, 12:51 AM), [https://www.computerworld.com/article/2478691/apple-s-biggest-innovation-for-2008---the-iphone-app-store.html/\[https://perma.cc/8S98-D6ME\]](https://www.computerworld.com/article/2478691/apple-s-biggest-innovation-for-2008---the-iphone-app-store.html/[https://perma.cc/8S98-D6ME]) ("It just seems to me that Apple has already profoundly changed the technology landscape again, and people are starting to realize it. In a few years time when we are drawing up the yearly Apple timeline, 2008 will be known for one thing. . . . The iPhone App store simply makes the old way of distributing software seem primitive.").

101. *The History of the Smartphone Market From 2005–2012 [Chart]*, ICLARIFIED (Mar. 21, 2013, 6:05 AM), [https://www.iclarified.com/28457/the-history-of-the-smartphone-market-from-20052012-chart/\[https://perma.cc/ZG7S-WKUX\]](https://www.iclarified.com/28457/the-history-of-the-smartphone-market-from-20052012-chart/[https://perma.cc/ZG7S-WKUX]).

102. S. O'Dea, *Share of Smartphone Users that Use an Apple iPhone in the United States from 2014 to 2021*, STATISTA (Mar. 31, 2020), [https://www.statista.com/statistics/236550/percentage-of-us-population-that-own-a-iphone-smartphone/\[https://perma.cc/AM2Z-DUWY\]](https://www.statista.com/statistics/236550/percentage-of-us-population-that-own-a-iphone-smartphone/[https://perma.cc/AM2Z-DUWY]).

103. See Defendant Apple Inc.'s Opposition to Epic Games, Inc.'s Motion for a Temporary Restraining Order and Order to Show Cause Why a Preliminary Injunction Should Not Issue at 4, *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR, 2021 WL 4128925 (N.D. Cal. Sept. 10, 2021), 2020 WL 6055411 [hereinafter *Apple Inc.'s Opposition to Epic Games, Inc.'s Motion for a Temporary Restraining Order*] ("[I]n 2016, Apple lowered its commission from 30% to 15% on subscriptions that renew after the first year."). Additionally, Apple has reduced the fee to 15% for developers that earn less than \$1 million annually. Tim Higgins & Sarah E. Needleman, *Apple Slashes App Store Fees for Smaller Developers*, WALL ST. J. (Nov. 18, 2020, 5:23 PM), [https://www.wsj.com/articles/apple-under-antitrust-scrutiny-halves-app-store-fee-for-smaller-developers-11605697203/\[https://perma.cc/9K23-55AF\]](https://www.wsj.com/articles/apple-under-antitrust-scrutiny-halves-app-store-fee-for-smaller-developers-11605697203/[https://perma.cc/9K23-55AF]).

approval.<sup>104</sup> As another example of this, at the launch of the iPhone in 2007, Apple partnered exclusively with wireless carrier AT&T, which led to a class-action suit against Apple and AT&T in 2008—invoking aftermarket issues.<sup>105</sup>

These vertical controls continue to be at the center of the complaints against Apple. In the *Pepper* and *Epic* litigations, perhaps the biggest point of contention is the 30% commission, which also applies to in-app purchases (IAPs). The 30% level is characterized as a supra-competitive price. There are also complaints that (a) the App Store is the exclusive distribution channel to download software on the iOS and (b) all payments must funnel through Apple Pay.

### 1. The Nature of Apple's App Store Policies

Not surprisingly, Apple argues that its vertical controls and governance policies—including those under antitrust scrutiny—are necessary to ensure a quality, high-end product for consumers.<sup>106</sup> It is also not surprising that

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104. See, e.g., Rob Griffiths & Dan Frakes, *Vetting the App Store Approval Process*, MACWORLD (Aug. 12, 2008, 6:54 AM), <https://www.macworld.com/article/191923/appstore-3.html>/[<https://perma.cc/3A5X-GGDY>] (“[T]he company gave a rough idea of how that approval process would work. Developers would write the programs, submit them to the App Store, and, once vetted by Apple, the apps would then be available to all.”). Apple eventually published the App Store Review Guidelines. *App Store Review Guidelines*, APPLE, <https://developer.apple.com/app-store/review/guidelines/> [<https://perma.cc/9G57-GMRB>] (“On the following pages you will find our latest guidelines arranged into five clear sections: Safety, Performance, Business, Design, and Legal.”).

105. *In re Apple & AT & TM Antitrust Litig.*, 596 F. Supp. 2d 1288 (N.D. Cal. 2008); see also Matt McMurrer, *Exclusive Gadget: Apple & AT&T Antitrust Litigation and the iPhone Aftermarkets*, 36 J. CORP. L. 495, 496 (2011) (making the case that Apple's agreement with AT&T is anticompetitive based on an aftermarket-based theory of harm).

106. For instance, during the *Epic* trial, Apple prominently noted the importance of having an integrated system in order to efficiently and properly maintain user privacy. See Apple Inc.'s Opposition to Epic Games, Inc.'s Motion for a Temporary Restraining Order, *supra* note 103, at 29 (“Epic’s claim also depends on holding that Apple’s App Store requirements—which ensure security, privacy and a quality user experience—are a ‘tie,’ monopoly maintenance and a violation of the rule of reason. Product and technology choices such as how Apple structures the App Store and its Guidelines do not constitute anticompetitive conduct.”); see also Todd, *supra* note 81, at 518 (“[D]istributing together or technically integrating two products can protect the platform owner’s reputation by ensuring that it is not unduly punished for malfunctions that occur when the platform is combined with a substandard adjacent good. This explains why Apple bundles its own applications with its mobile OS and has strict rules for third-party application developers that distribute through Apple’s App Store.”). See generally David S. Evans, *Governing Bad Behavior by Users of Multi-Sided Platforms*, 27 BERKELEY TECH. L.J. 1201, 1204 (2012) (detailing how governance policies are needed to internalize all the various externalities found on a platform); Kevin J. Boudreau & Andrei Hagiu, *Platform Rules: Multi-Sided Platforms as*

complainants like Epic argue that these controls are merely anticompetitive schemes to limit competition and extend Apple's market power into more areas of the digital economy.<sup>107</sup> This debate over vertical controls and integration is certainly not a new one. There is an entire body of economic literature that recognizes both the procompetitive benefits<sup>108</sup> and potential anticompetitive harms from vertical controls and integration.<sup>109</sup>

Apple's procompetitive arguments for these various vertical controls can really be considered in terms of information asymmetries. Suppose that users have perfect knowledge about all aspects of the app—including whether the content is appropriate for their children, whether the app is stable and free of major bugs, and whether the app developer will fraudulently misuse financial and personal data. If so, then Apple's self-appointed role as a “gatekeeper” for app access would serve no real purpose. Procompetitive arguments for strict vertical controls would be pretextual—as a complete laissez-faire approach would mean more apps to download without a downside of harms due to fraud and privacy violations. Therefore, permitting every developer to set up their own proprietary app stores and payment systems, for instance, would only serve to expand output and variety.

The reality, however, is that information is costly.<sup>110</sup> Consequently, consumers rely on reviews, word-of-mouth, warranties, and brand names to

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*Regulators*, in PLATFORMS, MARKETS AND INNOVATION 163, 165 (Annabelle Gawer, ed., 2009) (describing how platform governance decisions can solve problems of information asymmetry, uncertainty, coordination, and externalities).

107. See Epic Findings of Fact, *supra* note 26, ¶ 16.

108. See, e.g., Ralph A. Winter, *Vertical Control and Price Versus Nonprice Competition*, 108 Q.J. ECON. 61, 69–72 (1993) (describing how vertical restraints can correct a firm's bias against non-price or service competition); Marius Schwartz & Gregory J. Werden, *A Quality-Signaling Rationale for Aftermarket Tying*, 64 ANTITRUST L.J. 387 (1996) (showing that aftermarket tying can benefit consumers by overcoming information asymmetries regarding the quality of the primary product); David J. Teece, *Toward an Economic Theory of the Multiproduct Firm*, 3 J. ECON. BEHAV. & ORG. 39 (1982) (describing the benefits to coordinate the sale of complements); J. Gregory Sidak, *Do Free Mobile Apps Harm Consumers?*, 52 SAN DIEGO L. REV. 619, 626 (2015) (“[T]he dominant view within economic theory is that tying usually is procompetitive and enhances consumer welfare.”).

109. See, e.g., Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AM. ECON. REV. 837, 855–56 (1990) (showing the conditions needed for tying to successfully leverage market power); Carlton & Waldman, *supra* note 74 (describing the use of tying to maintain a monopoly in the tying market); Edward M. Iacobucci, *Tying as Quality Control: A Legal and Economic Analysis*, 32 J. LEGAL STUD. 435 (2003) (arguing against an efficiency explanation for tying based on it serving as a quality-control mechanism).

110. See generally George J. Stigler, *The Economics of Information*, 69 J. POL. ECON. 213, 224 (1961) (“The identification of sellers and the discovery of their prices are only one sample of the vast role of the search for information in economic life.”); see also George A. Akerlof, *The Market for “Lemons”: Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488 (1970)

determine quality. To the extent that app quality is unobservable or only observable after some non-negligible cost, then Apple is likely best positioned, in terms of resources and costs, to screen for low-quality apps. Further, Apple bears significant costs from poor quality or fraudulent apps—as the likelihood that users will direct their grievances solely at app developers (and exculpate Apple) if they are victims of fraud is highly unlikely.<sup>111</sup> Consequently, Apple is incentivized to maintain a high-quality ecosystem that minimizes the risk to users from low-quality apps.<sup>112</sup> Of course, even if we accept the premise that Apple should engage in a minimal level of app screening, one could argue that Apple’s current level of scrutiny is too restrictive. While conceptually possible, it is unclear what the “right” standard should be—particularly given how Apple has marketed itself and the iPhone as a premium company and product, respectively.<sup>113</sup>

In the context of these aftermarket policies governing third-party app delivery, there is a tendency to suggest some degree of wrongdoing due to Apple’s “closed” ecosystem instead of a more open one.<sup>114</sup> The broad implication is that open systems are in some manner more virtuous and pro-consumer. Part of the difficulty is that these representations are broad-brush categorizations when the reality is that systems may be open in some respects and closed in others. Further, what is the threshold to be considered “open”

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(demonstrating how information asymmetries can lead to market failures); Schwartz & Werden, *supra* note 108.

111. As an illustration of this point, Boudreau and Hagiu document how, in the 1980s, Atari Games “had not developed a technology for locking out unauthorized games”; thus, “Atari was unable to prevent the entry of opportunistic developers, who flooded the market with poor-quality games. . . . [B]ad games drove out good ones.” Boudreau & Hagiu, *supra* note 106, at 163. This issue was solved with Nintendo’s entry, which strictly regulated third-party games.

112. See generally Carl Shapiro, *Premium for High Quality Products as Rents to Reputation*, 98 Q.J. ECON. 659 (1983).

113. See, e.g., Andrei Hagiu & Julian Wright, *Multi-sided Platforms*, 43 INT’L J. INDUS. ORG. 162, 163 (2015) (“Apple manages only a two-sided platform between consumers and software providers, while Microsoft manages a three-sided platform between consumers, software providers, and hardware providers. These authors argue that Apple’s model leads to higher quality products, whereas Microsoft’s model generates more product variety and broader indirect network effects.”).

114. See, e.g., Brief for Respondents ¶ 2, *Apple v. Pepper*, 139 S. Ct. 1514 (2019) (No. 17-204), 2018 WL 4659225, at \*6–7 (“Apple’s intentionally closed system prevents competition in the aftermarket for iPhone apps. iPhone owners who want to unlock the range of functions on their iPhone have no choice but to shop for apps in the App Store, which enables the App Store to collect a higher price per app than if Apple were forced to entice app seekers in a competitive market.”); see also McMurrer, *supra* note 105, at 496 (“[T]he iPhone was one of the least-open smartphones on the market . . . and prevented software downloads except from the App Store.”). Of course, Google has been characterized as an “open” ecosystem, and this does seem to insulate Google from antitrust litigation.

or “closed”?<sup>115</sup> Rather, these systems all exist on a continuum with multiple dimensions to be considered open or closed.<sup>116</sup> A more sensible approach is to consider systems more in terms of specific vertical controls and to assess the merits of each control individually. Thus, while rhetorically tempting, simple classifications offer little in terms of actual economic substance, given that these labels give no clear welfare implications.

Additionally, there is a temptation to consider these aftermarket policies exclusively in the context of the economic literature on multisided platforms—given that an app store can be characterized as a platform.<sup>117</sup> Definitionally, platforms are principally characterized by the presence of significant indirect network effects, that is, when the presence of one group (e.g., users, buyers) attracts the participation of another group (e.g., advertisers, sellers)—where each group retains some control over the terms of the interaction.<sup>118</sup> Further, platforms are intermediaries that govern the relationship between these various groups with policies and controls.<sup>119</sup> While certainly important, these platform considerations can be overstated, however, depending on the circumstances. For instance, take a “single-sided” market such as a grocery store. While there is no direct relationship between the final consumer and the manufacturers of various products such as soft drinks, salty snacks, and ice cream, there is still a sense of “attraction” in that consumers wish to shop at retailers who carry a wide variety of manufacturers, and, in turn, manufacturers wish to participate at retailers with a lot of shoppers.<sup>120</sup>

Thus, rather than getting bogged down in strict definitional exercises to determine whether a business is a platform, in some instances, there are

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115. See Hanno F. Kaiser, *Are “Closed Systems” an Antitrust Problem?*, 7 COMPETITION POL’Y INT’L 91, 94 (2011) (“Open versus closed is therefore not a binary distinction but a matter of degree. All real-world systems are open in part and closed in others.”).

116. *Id.*

117. For instance, both Apple’s and Epic’s economic experts frame the discussion in terms of two-sided platforms. See Evans Testimony, *supra* note 71; Schmalensee Report, *supra* note 73.

118. Tim Stobierski, *What Are Network Effects?*, HARVARD BUS. SCH. ONLINE: BUS. INSIGHTS BLOG (Nov. 12, 2020), <https://online.hbs.edu/blog/post/what-are-network-effects> [<https://perma.cc/AM93-HFPZ>].

119. *Platform Power: Why Networks Hold the Key to Success*, KEARNEY, <https://www.kearney.com/operations-performance-transformation/article/?/a/platform-power-why-networks-hold-the-key-to-success> [<https://perma.cc/9HUX-759H>].

120. See Hagiu & Wright, *supra* note 113, at 163 (“[S]uppliers of supermarkets and discount superstores that take on inventory risk care about the number of consumers visiting the stores (and vice-versa), so that indirect network effects exist.”). Thus, Hagiu and Wright consider markets more on a continuum. *Id.* at 162 (“[W]e study the economic trade-offs that drive organizations to position themselves closer to or further away from a MSP [multi-sided platform] model, relative to more traditional alternatives such as vertically integrated firms, resellers, or input suppliers.”).

advantages to focusing more on the transaction cost economics pioneered by Ronald Coase's work on the nature of firms.<sup>121</sup> Again, platform considerations can matter—particularly in identifying various network effects that are critical to understanding consumer responses to changes in price, quality, or innovation. The problem is when the analysis simply invokes “network effects,” with the implicit suggestion that the analysis is therefore complete with either a procompetitive or anticompetitive conclusion. Platform considerations can also matter in assessing the welfare effects of a particular policy on the various platform groups.<sup>122</sup> Yet, not all policies invoke platform considerations. For instance, the Apple Pay requirement at issue in *Epic* does not necessarily involve indirect network effects or other platform considerations. Rather, it is more natural to consider the requirement as a vertical control, where a procompetitive argument would be that it is intended to prevent free-riding or provide a signal of quality to users. In sum, the point is that platform economics can be a complement to vertical control analysis. Still, caution should be warranted in making it the primary point of the analysis in all circumstances.

## 2. Is the App Store Just like Kodak?

Given the prior discussion on vertical controls and aftermarkets, how do the various app store policies fit within the aftermarket doctrine established in *Kodak*? Certainly, like repair services used to maintain a durable good, the App Store is a complement to a larger “system,” that is, a series of inputs working together to produce a final output.<sup>123</sup> Additionally, consumers could be locked-in to the primary product due to high switching costs based on system-specific investments. Yet, some notable differences could change the

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121. See generally Ronald H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386 (1937). For example, compare the business models of ride sharing platforms (such as Uber and Lyft), which have a more arm's length contractual relationship with their drivers, and traditional taxi cabs, which explicitly vertically integrate with drivers.

122. See *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2290 (2018) (examining the welfare of both cardholders and merchants when considering the legality of Amex's anti-steering provision, which prohibits retailers from steering Amex cardholders to alternative credit cards at the point of sale); see also Joshua D. Wright & John M. Yun, *Burdens and Balancing in Multisided Markets: The First Principles Approach of Ohio v. American Express*, 54 *REV. INDUS. ORG.* 717, 733–34 (2019).

123. See generally Schwartz & Werden, *supra* note 108 (finding that aftermarkets can arise in almost all situations involving a series of goods that work together to produce a final output); Shapiro & Teece, *supra* note 52, at 139 (explaining that an “aftermarket transaction” has “two characteristics: (1) the aftermarket product or service is used together with a primary product, and (2) the aftermarket product or service is purchased after the primary product.” (Emphasis omitted)).

assessment of whether consumers are unexpectedly locked-in and whether Apple's policies are plausibly causing consumer harm.

First, the App Store is bundled with the primary product (iOS) at the point of sale and is arguably part of what consumers consider to be the "iPhone."<sup>124</sup> In contrast, consumers are less likely to consider repair and maintenance services as part of the original durable good. This difference could matter in terms of determining whether consumers are somehow surprised by Apple's aftermarket policies. All else equal, consumer myopia and information asymmetries are more problematic the further out and less certain when consumers will participate in the aftermarket.<sup>125</sup> This behavior plausibly fits aftermarkets for parts and repair services, in certain circumstances.<sup>126</sup> In contrast, returning to the idea that consumers consider the App Store as part of the iPhone bundle, then the notion that users are surprised to learn the App Store is the only way to download third-party software is less credible—although certainly still a possibility. Generally speaking, the more consumers consider the aftermarket as integrated with the primary product, the less likely there will be consumer myopia and post-sale lock-in due to information asymmetries.<sup>127</sup>

What seems more relevant is whether, after significant lock-in, Apple changes the terms governing the App Store—whether for users, developers, or both—in a manner that is more restrictive and plausibly harms the competitive process in the aftermarket. This conduct does not seem to be the allegation against Apple—as Apple's policies have been in place since the App Store was introduced in 2008.<sup>128</sup> This contrasts with Kodak, which after facing increased competition from ISOs, changed its policy and no longer

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124. *Pre-installed Apps: Apple iPhone on iOS 15*, T-MOBILE, <https://www.t-mobile.com/support/devices/apple/apple-ios-15/pre-installed-on-ios-15> [<https://perma.cc/VL6F-8EA3>].

125. See, e.g., Shapiro & Teece, *supra* note 52, at 148 (“[A]ftermarket power is most likely to be significant if switching costs are high and long lived, if customers lack the protection of long-term contracts, and if information costs prevent most customers from engaging in life-cycle costing.”).

126. See, e.g., Norman W. Hawker, *Automotive Aftermarkets: A Case Study in Systems Competition*, 56 ANTITRUST BULL. 57, 74–75 (2011) (finding that consumer myopia can prohibit an accurate assessment of the total cost of automobile ownership when factoring in aftermarkets in collision repair parts as well as repair and maintenance services).

127. The idea of two separate markets is key to a leveraging theory of tying, but, as Carl Shapiro notes, “the boundary between the ‘platform’ and services running on that platform can be fuzzy and can change over time.” Carl Shapiro, *Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets*, 33 J. ECON. PERSP. 69, 84 (2019).

128. See John M. Yun, *The Legality of Legacy Business Practices in Antitrust*, 24 U. PA. J. BUS. L. (forthcoming 2022).



supplied parts to rival ISOs.<sup>129</sup> Certainly, this idea of an *ex post* opportunism could be possible in the future with Apple or other litigation involving app stores. A potential example of this is the lawsuit involving the allegation that Sony restricted the purchase of digital games to the PlayStation Store and charged supra-competitive prices.<sup>130</sup> Previously, Sony users could download games from a variety of retailers.<sup>131</sup> While it is not clear the policy change is anticompetitive, the conduct plausibly satisfies the “captive consumer” element of the aftermarket doctrine.

The second point of difference between app stores and Kodak-like aftermarkets is the inherent function of the aftermarket. Specifically, we could label Kodak-like aftermarkets as “maintenance aftermarkets,” that is, aftermarket goods and services used to upkeep, maintain, and operationalize the primary durable good. This description fits parts, repair services, and complements like ink and paper for printers. App stores, in contrast, conform with aftermarkets that are additive in value, which we could label as “additive aftermarkets.” This notion of aftermarkets includes, for example, Microsoft Windows (primary market) and PC software (aftermarket). While legal disputes tend to focus on maintenance aftermarkets, the economic literature on aftermarkets takes a broader view of aftermarkets<sup>132</sup>—including additive aftermarkets. The following Section builds out a simple economic framework to further detail the difference between these two types of aftermarkets.

### *C. Economic Framing of the Aftermarket Doctrine*

We can consider a maintenance aftermarket within a two-period setup. In period 1, there is competition in the primary product market. For subsequent periods to be relevant, the primary product must be durable so that it can be “consumed” in both periods 1 and 2. An example would be the purchase and consumption of a printer or car in period 1 and the need to purchase parts and services in period 2 to continue using the printer or car in period 2. Importantly, between periods 1 and 2, there is lock-in to one degree or another. In this context, lock-in means that there are costs if the consumer

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129. See, e.g., Goldfine & Vorrasi, *supra* note 93, at 210 (“Because the entering ISOs soon established the ability to provide cheaper, and often better, service than Kodak, they threatened Kodak with genuine competition in the service market. In response, Kodak changed its policy and refused to sell its photocopier and micrographic parts to ISOs.”).

130. See Class Action Complaint ¶ 8, Caccuri v. Sony Interactive Ent. LLC, No. 3:21-cv-03361 (N.D. Cal. filed May 5, 2021).

131. *Id.* ¶¶ 6–7.

132. See, e.g., Gregory T. Gundlach, *Aftermarkets, Systems, and Antitrust: A Primer*, 52 ANTITRUST BULL. 17, 19 (2007) (“Aftermarket products may or may not be essential to the usefulness of the primary product.”).

wants to switch to a different primary product in period 2 (including the actual cost of purchasing the competing primary product). The lock-in effect is strengthened if consumers make system-specific investments in complementary products such as training and asset-specific outlays, which raise the cost of switching. Lock-in is mitigated by factors that facilitate switching, such as a common standard protocol across competing systems and common interfaces and procedures.

Focusing on the value to consumers, we can consider the benefit to a user in period 1 as

$$B_1 = V_H - P \quad (1)$$

where  $B_1$  is the net benefit to the user in period 1 (in dollars);  $V_H$  is the user's (high) valuation, or willingness-to-pay (w.t.p.), to use the good in period one; and  $P$  is the price of the primary product.<sup>133</sup> Between periods 1 and 2, assume there is some degree of depreciation in the good, which lowers the valuation to the user in period 2 to  $V_L$ . However, the user has the option to pay for maintenance, which would restore the value to  $V_H$ . In other words, the user has two options in period 2. The first option is to let the product depreciate without maintenance, if so:

$$B_2^0 = V_L \quad (2)$$

where  $B_2^0$  is the benefit to the user in period 2 without maintenance. In contrast, if the user pays for maintenance, then the benefit becomes:

$$B_2^M = V_H - M \quad (3)$$

where  $B_2^M$  is the benefit in period 2 with maintenance;  $V_H$  is the user's "restored" valuation of the product in period 2; and  $M$  is the cost of maintenance. The user will invest in maintenance as long as  $B_2^M \geq B_2^0$ :

$$V_H - M \geq V_L \quad (4)$$

or when:

$$M \leq V_H - V_L \quad (5)$$

The strongest form of this model is to assume that  $V_L = 0$  in period 2, which means the product is not operational without the aftermarket product such as maintenance or some essential, complementary product such as ink for printers. If so, and assuming that  $V_H > M$  (that is, the full value of the product is always greater than the maintenance cost), then the user will always invest in maintenance in period 2. Alternatively, if the depreciation

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133. Note that the w.t.p. in period 1 may be lower than the price paid in period 1 since the consumer expects to consume the good in period 2 as well.

between periods is only marginal, then  $V_L$  remains fairly close in value to  $V_H$ . While this latter scenario is certainly a possibility, it is highly unlikely that there would be an aftermarket complaint in the first place—given that, the aftermarket product is not really necessary to maintain or operationalize the primary product.

Assuming that the depreciation is sufficiently high that users always invest in maintenance, then the total benefit,  $B_T$ , over the two periods is

$$B_T = B_1 + B_2^M = 2V_H - P - M \quad (6)$$

Under this setup, it is fairly straightforward to see how an aftermarket monopolist could try to extract monopoly profits from the consumer through a combined total “price” to pay for the entirety of the system, that is,  $P + M$ . Thus, even if a consumer pays a competitive price in period 1, the same consumer can then pay the total monopoly price in period 2 with a supra-competitive maintenance cost. It is also evident how the aftermarket theory of harm relies on the consumer not making this total benefit calculation *ex ante* before purchasing the primary good.<sup>134</sup> Otherwise, the consumer would shop at the supplier that offers the higher total benefit to the consumer.<sup>135</sup>

The above is an example of a maintenance aftermarket. Now consider an additive aftermarket, such as app stores. Taking the same two-period setup, in period 1, an iOS user obtains the same basic payoff in the first period:  $B_1 = V_H - P$ . Yet, in period 2, the user obtains

$$B_2 = V_H + (V_A - C) \quad (7)$$

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134. Again, this raises questions about the expectations of a significant percentage of consumers before they purchase a durable good. Arguably, the more essential an aftermarket item is to maintain the value of the primary product, then it is less likely consumers would be systematically uniformed. Certainly, there could be fraud or misrepresentations, but that raises consumer protection issues. There are factors, however, that can make it difficult for a consumer to accurately assess the full system cost—especially for a product that is infrequently purchased. For instance, there could be high variance for the maintenance costs, which can create informational noise. In *Epic*, the district court found Epic’s arguments about “bait-and-switch” practices to be unconvincing. See *Epic Games, Inc. v. Apple Inc.*, No. 4:20-cv-05640-YGR, 2021 WL 4128925, at \*32 (N.D. Cal. Sept. 10, 2021) (“Epic Games did not conduct any analysis of whether consumers know that they are buying into a walled garden. . . . Thus, there is no ‘bait-and-switch.’ Plaintiff strains on the policy-change argument.”).

135. This setup is not quite an expression of the “single monopoly profit theory,” which states that it does not make economic sense to tie two goods together because there is only a single monopoly profit to extract, and, thus, the firm is indifferent between extracting profits in the tying or tied market. See Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397, 403–04 (2009). The difference in this setup is that the firm cannot extract monopoly profits via the price of the primary product because of *ex ante* competition. It is only through the subsequent lock-in that the firm can extract greater profits from the locked-in users.

where  $V_A$  is the additive benefit of the aftermarket product, in this case, new apps downloaded in period 2;  $C$  is the cost to obtain the additive benefits, in this case, the cost of the apps. Combined, we have a different total benefit for additive aftermarkets

$$B_T = B_1 + B_2 = 2V_H - P + (V_A - C) \quad (8)$$

The difference between equations (6) and (8) is that  $-M$  is replaced by  $(V_A - C)$ . The  $V_A$  term, or the added benefit brought on by the aftermarket product, is the primary difference compared to a maintenance aftermarket. There is, however, still a cost term,  $C$ , that a supplier could potentially exploit like the maintenance cost,  $M$ . Consequently, under additive aftermarkets, the counterfactual (to avoiding the aftermarket) is not a significantly depreciated asset that needs maintenance expenditures to restore the original value, but rather the same highly valued product that was enjoyed in the first period. Thus, the choice in additive aftermarkets is whether the marginal benefit of the add-on, e.g., a specific app, is greater than the marginal cost.

Further, the  $V_A$  term raises the plausibility of efficiency justifications if the alleged conduct at issue, such as exclusivity, directly impacts the value of the additive aftermarket product. After all, a supplier has an incentive to increase the demand for the aftermarket product, which, in turn, could significantly increase the demand for the primary product.<sup>136</sup> Additionally, no consumer would add the aftermarket product if  $C$  is greater than  $V_A$ . Thus, even if a supplier could obtain a monopoly profit for the aftermarket product in period 2, it cannot also use aftermarket pricing, that is,  $C$ , to extract monopoly rents from the foremarket product as well. This represents a distinction from maintenance aftermarkets, where  $M$  is used to extract monopoly profits in the foremarket since the original foremarket price,  $P$ , was a competitive price (or a price below the monopoly price).

Further, suppose we complicate the model slightly and add uncertainty to the likelihood of maintenance and repair in the maintenance aftermarket. In that case, we can build in the idea that lock-in due to information asymmetry is more likely for a maintenance aftermarket than an additive aftermarket. Specifically, we can rewrite (6) as

$$B_T = B_1 + B_2 = 2V_H - P - \alpha M \quad (9)$$

where  $0 \leq \alpha \leq 1$ , and  $\alpha$  represents the probability that a consumer will need to repair the primary product in period 2. If consumers do not have good *ex ante* assessments of the value of  $\alpha$ , then this can lead to unexpected lock-in

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136. This would be the indirect network effect of having more apps increase participation on the iOS platform.

to the aftermarket services. The idea is that maintenance can be infrequent and discrete, which can create greater uncertainty. Additionally, a consumer may be uncertain of the intensity of use of the primary product, which could endogenously influence the probability that the consumer will need to use repair services in subsequent periods.

With the prior framework in mind, let us specifically consider the central allegation in *Epic* and *Pepper*, which is the 30% commission. Could this pricing scheme represent a mechanism for Apple to extract supra-competitive prices from users in the aftermarket for apps after they are locked into the iOS ecosystem? This question was directly addressed in recent research from Kobayashi and Wright.<sup>137</sup> They illustrate that an ad valorem tax on a product with zero marginal cost (or even near zero) does not impact the profit-maximizing price that app developers will set. In other words, it does not matter whether the tax is set at 0%, 30%, or even 90%—the optimal price will always be the same. How can this be? The intuition is fairly straightforward. If marginal cost is zero, assuming linear demand,<sup>138</sup> profit maximization becomes the same as revenue maximization.<sup>139</sup> Further, revenue maximization occurs at the output where marginal revenue is exactly zero, which occurs at the output level,  $Q_R$ . Now, suppose an app store takes 10% of that revenue in the form of a tax. The developer still has an incentive to obtain the highest revenue from the user before paying the 10% tax—which still occurs at output  $Q_R$ . Now suppose the tax is raised to 30%. Again, it is optimal to maximize revenue (which occurs at  $Q_R$ ) and then pay the tax, regardless of the level of the tax.

The implication for the aftermarket theory of harm is that economic theory predicts that the price that consumers will face for apps will not change if Apple instituted a lower commission.<sup>140</sup> Thus, for instance, a commission of 15% for all apps will not help users; although, it would certainly raise developers' profits. Now, could it be the case that a lower commission, and

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137. See generally Kobayashi & Wright, *supra* note 37, at 249–50.

138. Linearity is not strictly a necessary condition for this result. See *id.*

139. Profit maximization occurs where marginal revenue equals marginal cost. If marginal cost is zero, then profit maximization occurs at the output where marginal revenue is zero—which is the mid-point price and quantity on a linear demand curve.

140. What would be interesting is for a carefully crafted empirical study to examine this issue given that recently both Apple and Google have lowered the commission to 15% for smaller developers, that is, those who earn less than \$1 million each year. See Press Release, Apple Newsroom, Apple Announces App Store Small Business Program (Nov. 18, 2020), <https://www.apple.com/newsroom/2020/11/apple-announces-app-store-small-business-program/> [<https://perma.cc/ULQ4-ZCQP>]; Sameer Samat, *Boosting Developer Success on Google Play*, ANDROID DEVS. BLOG (Mar. 16, 2021), <https://android-developers.googleblog.com/2021/03/boosting-dev-success.html> [<https://perma.cc/MV4H-EBPR>].

the subsequent increase in profits to developers, would cause some developers to move from a freemium or free-with-ads model to a paid model since they would get a bigger percentage of the revenue? Certainly, it could affect that decision at the margin. Yet, the welfare implications on consumers are not entirely clear. Consumers who have a strong distaste for ads might benefit—although a developer always has the option to offer an ad-free version of the app.

Further, even if Apple's current commission levels are causing higher app prices, this, in itself, is not an antitrust violation. First, the 30% commission and exclusivity requirement have been in place since the App Store debuted, which (i) raises the probability that these practices are not intended to cause anticompetitive harm<sup>141</sup> and (ii) also lowers the probability that developers and consumers are somehow surprised by Apple's aftermarket conduct and policies as they have now been in place for over a decade. Second, it appears the 30% commission is ubiquitous across markets and various types of app stores.<sup>142</sup>

The bottom line is that app stores do not represent the same type of aftermarkets found in *Kodak* and subsequent cases, which highlights the importance of assessing the peculiar nature of each type of aftermarket.<sup>143</sup> Theories of harm that rely on lock-in, consumer myopia, and other information asymmetries can be more or less credible depending on the circumstances.

There are, however, commonalities across aftermarkets—particularly as it relates to efficiency-enhancing objectives. Fundamentally, aftermarkets can enhance the demand for the primary product.<sup>144</sup> A durable good with a strong network of repair centers and readily available parts will be more attractive—all else equal—than one with significantly fewer post-sale options.<sup>145</sup> For example, electric cars will become more viable as electric-charging stations proliferate. Similarly, app stores have incentives to offer vibrant games and other offerings, which, in turn, attract users to the platform—and keep their

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141. See, e.g., Yun, *supra* note 128 (arguing that legacy practices, under certain conditions, should be afforded a substantially reduced burden in proving a restraint is procompetitive under a rule of reason analysis).

142. See Tom Marks, *Report: Steam's 30% Cut is Actually the Industry Standard*, IGN (Jan. 13, 2020), <https://www.ign.com/articles/2019/10/07/report-steams-30-cut-is-actually-the-industry-standard/> [<https://perma.cc/EXB8-2ZN6>]; see also Schmalensee Report, *supra* note 73, at 9 (showing a 30% rate as the modal rate across platforms).

143. See *Mellon v. Cessna Aircraft Co.*, 7 F. Supp. 2d 1183, 1191 (D. Kan. 1998) (“What Mellon must actually do is present a reasonable economic theory with citations to evidence indicating the theory accurately reflects the market.”).

144. See Schulz, *supra* note 81, at 123.

145. See generally *id.* at 125–26.

interest while on the platform. Even a policy like aftermarket exclusivity can spur greater competition in the primary market.<sup>146</sup> Therefore, suppliers who rely on a strategy of “harvesting” profits in the aftermarket will, in turn, diminish the *ex ante* demand for the product.<sup>147</sup>

Moreover, even if aftermarkets represent a major source of profits for suppliers, this does not necessarily mean there is an incentive to exploit consumers in the aftermarket.<sup>148</sup> For instance, aftermarkets can be how firms obtain a return on investments in their systems and associated intellectual property rights.<sup>149</sup> Further, there can be a price discrimination motivation—particularly related to complements required to operationalize the primary good and additive aftermarkets like app stores.<sup>150</sup> The idea behind price discrimination via tying is to extract higher margins on high-intensity users, such as those who download a lot of paid apps, make in-app purchases, and subscribe to many services through their apps.<sup>151</sup> Price discrimination is not evidence of antitrust market power or a loss of welfare for consumers.<sup>152</sup>

All in all, additive aftermarkets have characteristics that generally attenuate the potential for anticompetitive harm—while having the same potential for procompetitive benefits. Thus, the aftermarket concerns expressed in *Kodak* have less basis in cases such as *Epic* and *Pepper*.

## II. ANTITRUST STANDING IN MOBILE MARKETPLACES

The complexity of the commercial relationships found in app stores has also raised questions regarding who has standing to seek antitrust damages in this type of market setting. The concept of antitrust standing governs who is allowed to sue under the Clayton Act, Section 4—as the statute permits “any person . . . injured in his business or property by reason of anything forbidden

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146. See, e.g., *id.* at 126 (“The prospect of higher profits on the aftermarket can generate fierce competition between firms on the primary market in order to attract as many users as possible.”).

147. See *id.*

148. *Id.* at 126–27.

149. See Benjamin Klein & John Shepard Wiley Jr., *Competitive Price Discrimination as an Antitrust Justification for Intellectual Property Refusals to Deal*, 70 ANTITRUST L.J. 599, 641 (2003) (“Once courts recognize the procompetitive motivation and effects aftermarket metering arrangements, much behavior that superficially appears to be an exclusionary extension of intellectual property rights will be more correctly be understood as an efficient way for a competitive firm to collect a greater fraction of the value of its intellectual property and to protect against free riding.”).

150. See Schulz *supra* note 81, at 127.

151. See generally Klein & Shepard Wiley Jr. *supra* note 149, at 601.

152. *Id.* at 622 (“The source of this dilemma is the antitrust thinking that incorrectly considers price discrimination as evidence of market power.”).

in the antitrust laws” to seek treble damages.<sup>153</sup> Yet, does this literally mean “any person”?<sup>154</sup> Section II.A provides an overview of the development of the current doctrine of antitrust standing—focusing on *Illinois Brick* and *Pepper*. Section II.B contends that the Court’s decision in *Pepper*, which gave app users the right to sue Apple over the 30% commission, was right for the wrong reason. Further, the Gorsuch dissent in *Pepper* offers a much more economically sound approach to antitrust standing as his “proximate cause” approach does not artificially focus on identifying the “direct purchaser,” which is unnecessarily limiting for more complex commercial relationships.<sup>155</sup>

#### A. Antitrust Standing from *Illinois Brick* to *Pepper*

*Illinois Brick Co. v. Illinois* is the leading case on antitrust standing in private antitrust litigation.<sup>156</sup> Explicitly, the Court put bounds on the meaning of “any person” and how proximate the person must be to the alleged harm in order to have standing.<sup>157</sup> Yet, to understand *Illinois Brick*, we must return to a decision made nine years earlier involving a shoe manufacturer. In *Hanover Shoe v. United Shoe Machinery Corp.*, Hanover Shoe sued United Shoe for anticompetitive harm from United’s supra-competitive prices on its shoe-making machinery sold to Hanover.<sup>158</sup> The Supreme Court rejected United’s defense that Hanover passed on all the supra-competitive overcharges to its downstream consumers.<sup>159</sup> The Court reasoned that allowing such a pass-on defense to antitrust liability would introduce needless complexity and lead to underdeterrence due to a dampened incentive to sue.<sup>160</sup>

Returning to *Illinois Brick*, the plaintiff in the case, the State of Illinois (and 700 local government entities), alleged that the defendant, the Illinois Brick Company, had conspired to anticompetitively raise the price of

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153. 15 U.S.C. § 15(a).

154. There is also the question of what constitutes “antitrust injury.” See *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 488 (1977) (“The antitrust laws, however, were enacted for ‘the protection of competition not competitors.’” (quoting *Brown Shoe Co. v. United States*, 370 U.S. 294, 320 (1962))).

155. *Apple Inc. v. Pepper*, 139 S. Ct. 1514, 1525 (2019) (Gorsuch, J., dissenting).

156. See generally Adam Polk, *Supreme Court Rejects “Who Sets the Price” Alternative to Illinois Brick*, A.B.A. (May 28, 2019), <https://www.americanbar.org/groups/litigation/committees/class-actions/practice/2019/1314illinois-brick-v-illinois/> [<https://perma.cc/R5BJ-3MER>] (discussing the notability in *Pepper* which upheld the ruling in *Illinois Brick*).

157. See *Ill. Brick Co. v. Illinois*, 431 U.S. 720, 728–35 (1977).

158. 392 U.S. 481, 483–83 (1968).

159. *Id.* at 487–88.

160. *Id.* at 493.



concrete blocks used in construction projects commissioned by the State.<sup>161</sup> The problem, however, is that the concrete blocks were purchased from Illinois Brick by masonry contractors and then, in turn, by general contractors—not by the State itself.<sup>162</sup> The Supreme Court ruled that only an overcharged “direct purchaser” of an anticompetitively priced good could sue the concrete-block manufacturer.<sup>163</sup> Consequently, the State did not have standing since it was merely an “indirect purchaser.”<sup>164</sup>

The rationale of the Court was twofold.<sup>165</sup> First, as in *Hanover Shoe*, it considered the administrative costs associated with recognizing the standing of indirect purchasers—namely, calculating the degree of “pass through” from one party to another along a supply chain.<sup>166</sup> The Court again argued that such calculations could be needlessly complex.<sup>167</sup> Perfect pass-through occurs, for example, if a retailer who faces a \$5 increase in wholesale costs can pass-through the entire \$5 increase to its customers. The reality, however, is pass-through is rarely perfect and can be complex to calculate.<sup>168</sup> The Court acknowledged the need to preserve the incentive to sue with administrability.<sup>169</sup> By focusing only on the direct purchaser, the Court barred a pass-through theory of antitrust liability.<sup>170</sup>

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161. *Ill. Brick Co.*, 431 U.S. at 720.

162. *Id.* at 726.

163. *Id.* at 745–47.

164. *Id.* at 748.

165. *Id.* at 728–29.

166. *Id.* at 746 (“[W]e are unwilling to carry the compensation principle to its logical extreme by attempting to allocate damages along all ‘those within the defendant’s chain of distribution.’” (quoting *Id.* at 761 (Brennan, J., dissenting))).

167. *Id.* at 741–42.

168. See, e.g., OFF. OF FAIR TRADING, COST PASS-THROUGH: THEORY, MEASUREMENT, AND POTENTIAL POLICY IMPLICATIONS 1 (2014) (“[C]ost pass-through by a business differs depending on whether the cost change is idiosyncratic or industry-wide; that the extent of cost pass-through by a business depends on the responsiveness of the demand and supply conditions it faces; and that cost pass-through varies with the degree of competition between businesses up and down the supply chain.”), [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf) [<https://perma.cc/KV2L-TURT>]; see also Paul L. Yde & Michael G. Vita, *Merger Efficiencies: Reconsidering the “Passing-On” Requirement*, 64 ANTITRUST L.J. 735, 735–36 (1996).

169. *Ill. Brick Co.*, 431 U.S. at 725–26. This also fits well within the economic theory of optimal deterrence, which seeks to deter misconduct and compensate victims from harms while considering incentive effects, error costs, and administrative costs from various legal rules. See, e.g., Frank H. Easterbrook, *Detrebling Antitrust Damages*, 28 J.L. & ECON. 445, 447 (1985) (“Enforcement is costly—not just in resources expended by litigants and the courts but also because antitrust can deter competition.”).

170. *Ill. Brick Co.*, 431 U.S. at 725–26.

Second, the Court explained that allowing indirect purchasers to sue could lead to duplicative damages—or, in the parlance of law and economics, overdeterrence.<sup>171</sup> This idea is simply the flip side of the Court’s earlier ruling in *Hanover Shoe*, which the Court was unwilling to overturn.<sup>172</sup> Thus, *Hanover Shoe* denied the defensive use of pass-through while *Illinois Brick* denied the offensive use of pass-through.<sup>173</sup> Combined, *Hanover Shoe* and *Illinois Brick* fit well within the economic framework of optimal deterrence based on the Court’s focus on excessive litigation and the administrability of adjudicating various claims to antitrust injury.<sup>174</sup> In essence, it is a prudential rule that seeks to avoid needless complexity.<sup>175</sup>

Forty years after *Illinois Brick*, the Court took up the issue of antitrust standing again with *Pepper*.<sup>176</sup> The case involves a class of iPhone users suing Apple over the 30% commission on app purchases.<sup>177</sup> The claim is that the 30% commission is a manifestation of Apple’s monopolistic practices on the iPhone.<sup>178</sup> While the Court did not rule on the merits of the antitrust claim, it

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171. *Id.* at 741. (“There is thus a strong possibility that indirect purchasers remote from the defendant would be parties to virtually every treble-damages action.”). Allowing indirect purchasers to sue could also have other unintended consequences. See William M. Landes & Richard A. Posner, *Should Indirect Purchasers Have Standing To Sue Under the Antitrust Laws? An Economic Analysis of the Rule of Illinois Brick*, 46 U. CHI. L. REV. 602, 606 (1979) (“Overruling *Illinois Brick* would cause direct and indirect purchasers to share the risk and the possible return on the antitrust claim, and the price of products such as X would increase to compensate the direct purchaser for the lower expected value of his antitrust claim.”).

172. *Ill. Brick Co.*, 431 U.S. at 745; see also Landes & Posner, *supra* note 171, at 603 (“*Illinois Brick* is the mirror image of *Hanover Shoe*.”).

173. See *Ill. Brick Co.*, 431 U.S. at 744–47.

174. Landes & Posner, *supra*, note 171, at 604 (“[E]conomic analysis . . . leads us to conclude that allowing indirect purchasers to sue would probably retard rather than advance antitrust enforcement. The basis for this conclusion lies in the detrimental impact that allowing a passing-on defense would have on enforcement by direct purchasers.”); Gregory J. Werden & Marius Schwartz, *Illinois Brick and the Deterrence of Antitrust Violations—An Economic Analysis*, 35 HASTINGS L.J. 629, 631 (1984) (“We conclude that the rule limiting recovery to direct purchasers is probably appropriate.”); William H. Page, *The Scope of Liability for Antitrust Violations*, 37 STAN. L. REV. 1445, 1457 (1985) (“I will argue that the core of the doctrines of antitrust injury, standing, and *Illinois Brick* limits the scope of liability to approximately the level of optimal deterrence.”).

175. The ruling has been somewhat defanged due to various state law repeals—as over half the states allow some standing for indirect purchasers to seek damages. See Michael Murray, Deputy Assistant Att’y Gen., Remarks at the United States Council for the International Business Competition Committee Meeting (Sep. 25, 2019), <https://www.justice.gov/opa/speech/deputy-assistant-attorney-general-michael-murray-delivers-remarks-united-states-council/> [<https://perma.cc/2K6H-EAL8>].

176. *Apple Inc. v. Pepper*, 139 S. Ct. 1514, 1514 (2019).

177. *Id.* at 1519.

178. *Id.*

did rule on whether app users have the standing to sue Apple.<sup>179</sup> With a slim 5-4 majority, the Court reasoned that, since users “directly purchase” apps from Apple, they have standing to sue under the *Illinois Brick* standard.<sup>180</sup> Writing for the majority, Justice Kavanaugh asserts that “[i]t is undisputed that the iPhone owners bought the apps directly from Apple. Therefore, under *Illinois Brick*, the iPhone owners were direct purchasers who may sue Apple for alleged monopolization.”<sup>181</sup> In arriving at this conclusion, Justice Kavanaugh dismisses Apple’s claim that, since developers set the price of their apps, iPhone owners only have standing to sue the developer.<sup>182</sup> The Court argues that Apple’s “who sets the price” theory is deficient because it does not follow from *Illinois Brick*, elevates form over substance, and would result in parties like Apple manipulating contract arrangements to avoid liability.<sup>183</sup>

In contrast, Justice Gorsuch’s dissent classifies *Illinois Brick* as a rule dependent on where the alleged overcharge is “first (and thus surely) felt.”<sup>184</sup> Specifically, the dissent explains that standing should be “limited to plaintiffs whose injuries are proximately caused by violations of the statute.”<sup>185</sup> Accordingly, this proximate cause requirement would bar suits for injuries that are “derivative of misfortunes visited upon a third person by the defendant’s acts.”<sup>186</sup> Further, the dissent argues that the majority’s characterization of *Illinois Brick* as a “direct purchaser” standard is “revisionist” and elevates form over substance.<sup>187</sup> Rather, standing should be limited to the party that “first felt the sting” of the alleged anticompetitive conduct.<sup>188</sup> Using the rule of proximate cause, the dissent reasons that since “the 30% commission falls initially on the developers . . . [p]laintiffs can be injured only if the developers are able and choose to pass on the overcharge to them in the form of higher app prices that the developers alone control.”<sup>189</sup>

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179. *Id.*

180. *Id.*

181. *Id.* at 1520.

182. *Id.* at 1521–24.

183. *Id.* at 1522–24.

184. *Id.* at 1529 (Gorsuch, J., dissenting) (“Instead of focusing on the traditional proximate cause question where the alleged overcharge is first (and thus surely) felt, the Court’s test turns on who happens to be in privity of contract with whom.”).

185. *Id.* at 1527 (citing *Lexmark Int’l, Inc. v. Static Control Components, Inc.*, 572 U.S. 118, 132, 134 (2014)).

186. *Id.*

187. *Id.* at 1529.

188. *Id.* at 1530.

189. *Id.* at 1528 (emphasis omitted).

Thus, the dissent finds that iPhone owners do not have standing to sue Apple for the alleged overcharge from the 30% commission.<sup>190</sup>

Clearly, the Supreme Court in *Pepper* created a schism in the antitrust standing doctrine based on how Justice Kavanaugh’s majority opinion and Justice Gorsuch’s dissent interpreted the *Illinois Brick* doctrine. The majority considers *Illinois Brick* as a rule identifying the direct purchaser, while the dissent considers it as a rule identifying the proximate cause of the harm. These two rules may result in the same legal conclusion, such as in *Illinois Brick* and the pending *National Football League v. Ninth Inning* case,<sup>191</sup> but, as the next Section argues, these two interpretations of *Illinois Brick* are profoundly different and could benefit from some degree of reconciliation.

### B. Reconciling *Pepper* and Excise Taxes

Did the Court arrive at the right result in *Pepper*? If so, why or why not? This Section argues the majority in *Pepper* was right in ruling that app users have standing to sue Apple for the 30% commission—holding aside the merits of the antitrust claim, but the majority was right for the wrong reason. Namely, the “direct purchaser” rule is too limiting a standard and makes little economic sense in the context of the 30% commission, which is an excise tax on transactions between developers and users. The direct purchaser rule fits well for the basic, straightforward, and temporally discrete commercial relationships found in *Illinois Brick* but is clumsy when adapted to the realities of more complex commercial relationships such as those found in app stores. Rather, the dissent’s “proximate cause” interpretation of *Illinois Brick* better suits the economic reality of—not only the conduct considered in *Pepper*—but more generally. However, the dissent improperly disallowed app users standing because it focused on the legal incidence of taxes rather than on the economic incidence.

Consider a “basic” supply chain where a manufacturer sells its product at a wholesale price to a retailer, who takes ownership over the product and, in

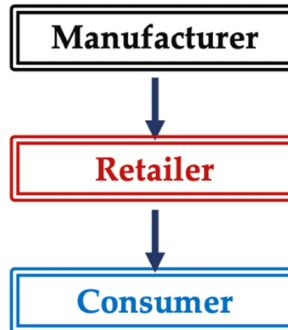
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190. *See id.*

191. In 2020, the Court denied a petition for a writ of certiorari made by the National Football League (NFL) involving an allegation from a group of sports bars, led by The Mucky Duck, that the various NFL teams colluded to create the NFL Sunday Ticket sold through DirecTV and raised prices to supra-competitive levels. In a statement explaining the denial, Justice Kavanaugh explained the case was only at the motion-to-dismiss stage, which counseled against a review. However, he also questioned whether sports bars have standing to sue the NFL since DirecTV is the direct purchaser: “[P]laintiffs may not have antitrust standing to sue the NFL and the individual teams. This Court’s case law ‘authorizes suits by direct purchasers but bars suits by indirect purchasers.’” *Nat’l Football League v. Ninth Inning, Inc.*, 141 S. Ct. 56, 57 (2020) (mem.) (quoting *Pepper*, 139 S. Ct. at 1520) (emphasis omitted)).

turn, sells the product at a retail price to a final consumer. Figure 1 depicts this basic supply chain.

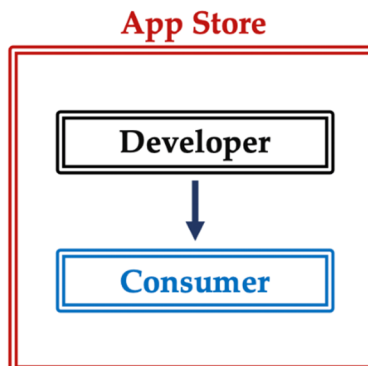
Figure 1: Basic Supply Chain



Interpreting *Illinois Brick* as a direct purchaser standard works well in this type of setting. Suppose the manufacturer colludes with rivals to raise the wholesale price to the retailer by 30%. Under *Illinois Brick*, the retailer has standing to sue the manufacturer, while the final consumer does not—even if the retailer passes some or the entire cost to the final consumer. In this setting, the retailer is the “direct purchaser” to the manufacturer, who is the party engaging in the anticompetitive conduct, while the consumer is the “indirect purchaser.”

In contrast, consider a supply chain under an app store paradigm, which is depicted in Figure 2.

Figure 2: App Store Supply Chain



The figure captures the idea that both the App Store and developer set the terms of exchange with the consumer. Specifically, the developer sets the app price. At the same time, Apple imposes governance policies that can directly impact the price, such as the 30% commission and the requirement that the price of paid apps must end in 99 cents.<sup>192</sup> Importantly, the notion that Apple is the “Retailer” who comes between the Developer and Consumers in Figure 2, which conforms to the majority’s characterization in *Pepper*,<sup>193</sup> is trying too hard to fit all the relevant parties on an app store platform into a basic vertical supply chain. Similarly, the notion that Apple is somehow strictly “above” the Developer in Figure 2 imposing a 30% commission, which conforms to the dissent’s characterization in *Pepper*,<sup>194</sup> would wrongly suggest that Apple is only dealing with the developer and has no direct relationship with the consumer.

Again, while the concept can be overemphasized, Apple’s App Store is a multisided, transactional platform that brings together both developers and consumers to engage in a market exchange.<sup>195</sup> In this role, the platform sets the commercial rules by which the exchange occurs, such as the requirement that the parties use Apple Pay as the medium of exchange; Apple receives a 30% commission on all transactions; the App Store is the exclusive distributor of software on the iOS; and developers cannot “steer” users to distribution channels outside of iOS when those users are on apps distributed through the App Store.<sup>196</sup> The difficulty is that the involvement of intermediaries and their governance policies may not easily translate into determining who the direct and indirect purchasers are.<sup>197</sup>

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192. *Pepper*, 139 S. Ct. at 1528 (Gorsuch, J., dissenting).

193. *Id.* at 1521 (majority opinion) (“The iPhone owners purchase apps directly from the retailer Apple, who is the alleged antitrust violator.”).

194. *Id.* at 1528 (Gorsuch, J., dissenting) (“[T]he 30% commission falls initially on the developers. So if the commission is in fact a monopolistic overcharge, the *developers* are the parties who are directly injured by it.”).

195. See, e.g., Lapo Filistrucchi et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. COMPETITION L. & ECON. 293, 298 (2014) (“Two-sided transaction markets, such as payment cards, are instead characterized by the presence and observability of a transaction between the two groups of platform users.”).

196. *Epic Games, Inc. v. Apple Inc.*, 493 F.Supp.3d 817, 828–29 (N.D. Cal. 2020).

197. See Jason Wasserman, *Apple v. Pepper: Applying the Indirect Purchaser Rule to Online Platforms*, 14 DUKE J. CONST. L. & PUB. POL’Y SIDEBAR 147, 148 (2019) (“The indirect purchaser rule is generally considered settled precedent. How the rule should apply to online platforms, however, differs between circuit courts.”). Compare *Campos v. Ticketmaster Corp.*, 140 F.3d 1166, 1173 (8th Cir. 1998) (holding that ticket buyers are indirect purchasers of Ticketmaster under *Illinois Brick*), with *Apple Inc. v. Pepper (In re Apple iPhone Antitrust Litig.)*, 846 F.3d 313, 324 (9th Cir. 2017) (holding app users are direct purchasers of Apple), *aff’d sub nom.* *Apple Inc. v. Pepper*, 139 S. Ct. 1514 (2019).

With this setup, we can reexamine *Pepper* and the 30% commission. As stated, the commission is effectively an excise tax, generally, and an ad valorem tax, specifically. Basic microeconomic theory establishes there is a difference between the legal incidence of the tax, that is, who is legally responsible for paying the tax to the taxing entity, and the economic incidence of the tax, that is, who bears the actual burden of the tax in terms of paying a higher price (from the perspective of the buyer) or receiving a lower net price (from the perspective of the seller).<sup>198</sup> In many circumstances, these two incidences are completely orthogonal.<sup>199</sup> Therefore, focusing on the legal incidence of the tax, which is what the dissent did in *Pepper*, can miss the economic reality of who is directly harmed by the tax. Economic incidence is based on the fundamental idea that excise taxes impact the entire transaction, which in turn impacts both buyers and sellers. The idea that one party “pays” the tax and then “passes on” some of the burden of the tax on the other party presents a distorted and misleadingly stylized framing of the economic reality of taxes.

Under certain market circumstances, it may be the case that the economic burden is borne completely by the buyer or the seller. For instance, if demand is perfectly inelastic, which means consumers always buy a given quantity regardless of the price, then consumers will bear the entire burden. Similarly, if supply is perfectly inelastic, then producers will bear the entire burden. There can also be special cases such as an ad valorem tax imposed on a seller who faces both a downward sloping demand curve and zero marginal cost—which is the precise scenario in *Pepper*.<sup>200</sup> In this case, the seller, or app developer, bears the entire burden of the tax. Thus, even though app users should technically have standing, the actual harm to users from the 30% commission is zero.

Returning to the majority’s and dissent’s rationales in *Pepper*, which one better conforms to the economic realities of the 30% commission? Under the majority’s direct purchaser interpretation of *Illinois Brick*, users are

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198. In the wake of *Pepper*, a number of economists have made this point that the key is to focus on the economic incidence of taxes. See Sarah Oh & Scott Wallsten, *The Law and Economics of Apple Inc. v. Pepper*, TECH. POL’Y INST. (Dec. 20, 2018), <https://techpolicyinstitute.org/publications/antitrust-and-competition/the-law-and-economics-of-apple-inc-v-pepper/> [<https://perma.cc/R36H-A9KR>]; Tirza J. Angerhofer & Roger D. Blair, *Economic Reality at the Core of Apple*, 66 ANTITRUST BULL. 308 (2021).

199. Gerald Prante & Andrew Chamberlain, *Economic vs. Legal Incidence: Comparing Census Bureau Figures with Tax Foundation Tax Burdens*, TAX. FOUND. (June 9, 2006), <https://taxfoundation.org/economic-vs-legal-incidence-comparing-census-bureau-figures-tax-foundation-tax-burdens/> [<https://perma.cc/8L45-HP7L>].

200. See Kobayashi & Wright, *supra* note 37, at 262–63; see also discussion *supra* Section I.C.

characterized as directly purchasing apps from Apple.<sup>201</sup> Certainly, Apple “handles” the transaction through Apple Pay, but this is no different than a credit card company handling a transaction on Amazon. While Apple Pay is the medium of exchange in the App Store, this does not make Apple the direct seller. Suppose, for instance, that Apple dropped the requirement to use Apple Pay but maintained the 30% commission. Under the logic of the majority in *Pepper*, app users would lose standing to sue Apple for the 30% commission as Apple would no longer handle the transaction.

In contrast, consider the dissent’s proximate cause interpretation of *Illinois Brick*. Specifically, the standard is focused on identifying the party or parties nearest to the harm caused by the conduct.<sup>202</sup> This standard does not artificially look for a “direct purchaser.” In *Pepper*, the alleged harm is the 30% commission on all app transactions. Both parties to the exchange conceptually bear this excise tax—thus, both app users and developers should have standing to sue Apple, as the market price is ultimately jointly set by users, developers, and Apple.

An alternative to a proximate cause interpretation of *Illinois Brick* is to consider multisided platforms as an integrated relevant market and to recognize standing for all the sides of the platform (in this case, developers and users).<sup>203</sup> While there is an appeal to this approach and, ultimately, this may be a desirable path to establishing standing for platforms, there are some potential difficulties that may or may not be significant. Is it strictly transactional platforms that fall under this rubric to establish standing, or are non-transactional platforms also included? Would “platform standing” be a special carve-out, or complement, to a direct purchaser interpretation of *Illinois Brick*? Will courts always be required to establish the relevant product market before establishing standing in cases that invoke platform considerations? Indeed, the logic of identifying certain platforms as materially different from a basic vertical supply chain industry found in *Illinois Brick* is sound. The question is whether it offers advantages over a

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201. *Apple Inc. v. Pepper*, 139 S. Ct. 1514, 1521 (“The iPhone owners pay the alleged overcharge directly to Apple.”).

202. The idea of using an assessment of proximity is certainly not new and is how some courts have interpreted *Illinois Brick*. *E.g.*, *Am. Ad Mgmt., Inc. v. Gen. Tel. Co.*, 190 F.3d 1051, 1058 (9th Cir. 1999) (“[I]t is not the status as a consumer or competitor that confers antitrust standing, but the relationship between the defendant’s alleged unlawful conduct and the resulting harm to the plaintiff.”).

203. See Geoffrey A. Manne & Kristian Stout, *The Evolution of Antitrust Doctrine after Ohio v. Amex and the Apple v. Pepper Decision That Should Have Been*, 98 NEB. L. REV. 425, 430 (2019) (“As a result, the *Amex* Court’s holding should also have required a finding in *Apple* that an app user on one side of the platform who transacts with an app developer on the other side of the market, in a transaction made possible and directly intermediated by Apple’s App Store, should similarly be deemed in the same market for standing purposes.”).



proximate cause standard—given that the proximate cause standard is flexible enough to consider the features of multisided platforms while staying general enough to encompass complex business relationships beyond platforms. Additionally, proximate cause avoids the additional procedural step of determining whether a market is multisided and invoking carve-outs rather than having a more encompassing antitrust standing doctrine.

If the dissent in *Pepper* used the right standard, then why did they arrive at the wrong conclusion that users do not have standing to sue Apple? Both the majority and dissent erroneously tried to fit the commercial relationships found on mobile app stores to those found in concrete blocks, that is, the product in *Illinois Brick*. The majority focused on the idea of a direct purchaser while the dissent focused on the legal incidence of a tax. This emphasis led the dissent to use a misleadingly stylized framing of the tax where app developers “pay” the tax to Apple and then “pass on” some, all, or none of the tax to users. In doing so, the dissent failed to implement what they properly acknowledge is the right approach: “[W]e’ve long recognized that antitrust law should look at ‘the economic reality of the relevant transactions’ rather than ‘formal conceptions of contract law.’”<sup>204</sup>

To further illustrate the advantage of a proximate cause standard rather than a direct purchaser standard, consider a vertical control such as minimum resale price maintenance (RPM). Minimum RPM is when a manufacturer requires the retailer to sell the product at or above a specific minimum price.<sup>205</sup> Do consumers of the retailer have standing to sue the manufacturer for antitrust injury? Under a strict direct purchaser standard, the consumer would not have standing since the consumer is only directly transacting with the retailer and not the manufacturer. Yet, one theory of harm is the use of vertical practices such as RPM to transfer profits from the manufacturer to retailers in a manner that disincentivizes retailers from accommodating entrants and thus, ultimately, deters welfare-enhancing entry.<sup>206</sup> Notably, this theory of harm does not rely on exclusivity or collusion between the

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204. *Pepper*, 139 S. Ct. at 1529 (Gorsuch, J., dissenting).

205. Since *Leegin*, minimum RPM has been assessed under a rule of reason standard, which overruled a 96-year precedent set in *Dr. Miles*. Compare *Leegin Creative Leather Prods., Inc. v. PSKS, Inc.*, 551 U.S. 877, 881 (2007) (overruling precedent to create new standard that RPM be assessed under a rule of reason standard), with *Dr. Miles Med. Co. v. John D. Park & Sons Co.*, 220 U.S. 373, 385 (1911) (articulating original standard, which held RPM should be assessed under a per se rule).

206. See John Asker & Heski Bar-Isaac, *Raising Retailers’ Profits: On Vertical Practices and the Exclusion of Rivals*, 104 AM. ECON. REV. 672 (2014).

manufacturer and retailer.<sup>207</sup> Yet, since the retailer is sharing in the elevated profits of the manufacturer, the retailer has no incentive to bring an antitrust claim—while consumers would have no standing to sue under a direct purchaser standard.

Under a proximate cause standard, however, both the consumer and retailer would have standing to sue since the RPM policy is impacting the transaction between the retailer and consumer (broadly similar to the excise tax in *Pepper*), which means the proximate cause of the harm of the RPM policy implicates both retailers and consumers. This standard better conforms to the economic reality of the impact of minimum RPM and is robust across various theories of harm, including the aforementioned exclusionary impact of a vertical practice.

In summary, a more robust interpretation of *Illinois Brick* is that antitrust standing is based on identifying the proximate impact of the antitrust conduct at issue—not the direct purchaser per se. In a sense, a direct purchaser is one specific manifestation of the proximate cause standard—which fits particularly well for a basic vertical supply chain. A proximate cause standard may implicate just one party (such as in *Illinois Brick*) or two parties (such as in *Pepper*). The point is to focus on where the “sting” from the alleged conduct is first felt—whether the conduct is a collusive agreement or a vertical control.

Such a standard naturally handles policies such as a 30% commission and the requirement that both parties must conduct their exchange with Apple Pay. Even more so, for something like exclusivity and the anti-steering provision, using the “direct purchaser” standard really makes little sense—as these vertical controls impact the freedom of developers. Additionally, there is no exchange per se to scrutinize. Rather, suppose Apple’s use of exclusivity

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207. Even with some degree of collusion, it is not entirely clear that consumers would have standing to sue the manufacturer under a direct purchaser standard. Namely, there is some degree of controversy and uncertainty as to whether there is a “co-conspirator” carve out to *Illinois Brick*. While the Supreme Court has not expressly ruled on a co-conspirator carve out, the Ninth Circuit has a series of decisions that arguably creates one. See Christopher T. Casamassima & Tammy A. Tsoumas, *The Illinois Brick Wall: Standing Tall*, J. ANTITRUST & COMPETITION 67, 73 (2011), [https://www.kirkland.com/-/media/publications/article/2011/04/the-illinois-brick-wall-standing-tall/journalofantitrust\\_070611.pdf](https://www.kirkland.com/-/media/publications/article/2011/04/the-illinois-brick-wall-standing-tall/journalofantitrust_070611.pdf) [<https://perma.cc/7Q3R-A6B6>] (“A fundamental disagreement, however, exists regarding the scope (and even existence) of a co-conspirator exception in the Ninth Circuit.”). Yet, in *Kansas v. Utilicorp United, Inc.*, the Supreme Court reaffirmed its reticence to create new carve outs to its ruling in *Illinois Brick*. 497 U.S. 199, 216 (1990) (“We nonetheless believe that ample justification exists for our stated decision not to ‘carve out exceptions to the [direct purchaser] rule for particular types of markets.’” (citing *Ill. Brick Co. v. Illinois*, 431 U.S. 720, 744 (1977))). The two carve outs recognized in *Illinois Brick* are “cost plus” contract pricing and when “the direct purchaser is owned or controlled by its customer.” *Ill. Brick Co.*, 431 U.S. 720 at 736, n.16.

and anti-steering are indeed anticompetitive, which is disputable.<sup>208</sup> In that case, these policies impact both developers (as it impacts their ability to distribute software) and iPhone owners (as it impacts their choices and, potentially, the prices paid).<sup>209</sup> Proximate cause more naturally captures these impacts compared to a direct purchaser standard.

This juxtaposition is not to suggest a proximate cause interpretation of *Illinois Brick* is perfect and without shortcomings. Proximate cause is inescapably a vague concept—particularly as it applies to markets and antitrust. Yet, its vagueness gives it a degree of flexibility that a direct/indirect purchaser standard does not afford—yet preserves the concern of the Court in *Illinois Brick* about optimal deterrence and administrative costs. Proximate cause fits just as well with arrangements found in *Illinois Brick*, *Pepper*, and other emerging markets, such as online sports betting, where questions of antitrust standing are likely to arise.<sup>210</sup>

However, there is a very relevant question whether allowing both app developers and users to sue over the alleged overcharge on Apple's commission would negatively impact optimal deterrence. Specifically, could there be overdeterrence given that both users (*Pepper*) and developers (*Epic*) can now sue? Additionally, would litigation or error costs increase

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208. See, e.g., Manne & Stout, *supra* note 203, at 456 (“Indeed, on the merits, it seems that Apple should prevail in *Apple*.”). Other observers, however, take the opposite position. See, e.g., Damien Geradin & Dimitrios Katsifis, *The Antitrust Case Against the Apple App Store*, 17 J. COMPETITION L. & ECON. 503, 583 (2021); Roger D. Blair & Tirza J. Angerhofer, *Apple's Mounting App Store Woes*, 35 ANTITRUST ABA 75, 78 (2021).

209. Cf. Roger D. Blair & Christine A. Piette, *Antitrust Injury and Standing in Foreclosure Cases*, 31 J. CORP. L. 401, 412 (2006) (“Consumers and foreclosed rivals are not alternative plaintiffs. They are separate and have distinct claims. The foreclosed would-be entrants have no claim to the overcharges and the consumers have no claim to the lost profits. Consumers are *additional*, rather than *alternative*, plaintiffs.” (emphasis added)). More difficult questions arise, however, if a competitor is not actually foreclosed but suffers from significantly increased costs based on a raising rivals’ costs theory of harm, which can be considered a subset of foreclosure. Do the customers of competitors who are not foreclosed, but suffer a higher price due to the higher costs have standing to sue the monopolist? This starts to proliferate the number of plaintiffs and the associated complexity of apportioning damages which the Court in *Illinois Brick* wished to avoid. In this setting, proximate cause would likely rule out harm from customers of competitors.

210. See Ryan M. Rodenberg, *Antitrust Standing After Apple v. Pepper: Application to the Sports Betting Data Market*, 64 ANTITRUST BULL. 584 (2019) (“Industry stakeholders—including sports betting operators, data distributors, state and federal lawmakers, and sports leagues—have directly or indirectly flagged antitrust concerns stemming from the structure of the sports betting data market.”); see also Manne & Stout, *supra* note 203, at 431 (“The substantive evolution of antitrust doctrine, in other words, is partially realized through the adaptation of procedural doctrines to new business realities.”).

substantially?<sup>211</sup> In theory, it is possible. Opening up an additional class of plaintiffs can risk overdeterrence. Yet, some considerations suggest this may not be a large risk. Both developers and users are diffused groups, and there could be collective action problems in bringing a class action suit. One novel solution is to combine developers and users into one class.<sup>212</sup> Certainly, large developers like Epic have a stronger incentive to sue, which could open the door for excessive litigation.

Yet, a necessary condition for excessive litigation is that the harms are not properly divided between users and developers. Conceptually, however, there is an economic solution to this division problem, which is explicitly assessing the economic incidence of the excise tax. Calculating this, however, can come at a significant cost, including the need to hire economic experts, estimate supply and demand, et cetera. Yet on this question, it is not clear the marginal administrative costs are that high. For instance, estimating damages in antitrust litigation may require estimates of demand and supply, which provide economies of scope in estimating the economic incidence of an excise tax. In the specific case of *Pepper*, the analysis of economic incidence is straightforward. Further, the social cost of administrative difficulties can be overstated. These are often complex business practices where false positives (condemning a procompetitive practice) or negatives (failing to condemn an anticompetitive practice) can create significant social harm.<sup>213</sup>

In summary, the reasoning of the majority and dissent in *Pepper* are best viewed as Lego pieces rather than as evidence that the *Illinois Brick* standing doctrine is fundamentally broken.<sup>214</sup> The majority properly ruled that app users have standing to sue Apple, while the dissent properly framed *Illinois Brick* as a proximate cause standard rather than a strict direct purchaser standard. Thus, like combining the best Lego pieces from two separate models, we can arrive at a new interpretation that combines the best elements of both opinions.

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211. See generally Page, *supra* note 174, at 1457 (“It is essentially a comparative inquiry to identify the most efficient class or classes of plaintiffs from among those that have suffered antitrust injury. There are two principal standards . . . overdeterrence . . . [and] the direct costs of litigation or . . . risk of error.”).

212. See Angerhofer & Blair, *supra* note 198, at 320 (“[I]t would seem sensible for the iPhone owners and the app developer to file a joint suit . . . Whether this is feasible procedurally is another matter.”).

213. See, e.g., Manne & Stout, *supra* note 203, at 456 (“[C]omplicated as it may be, the needs of substantive accuracy trump the administrative costs in sorting out the incidence of the costs and courts cannot avoid them.”).

214. See, e.g., Jeffrey L. Harrison, *After Forty Years of Antitrust Revision and Apple Inc. v. Pepper, What Now Illinois Brick?*, 11 WM. & MARY BUS. L. REV. 695, 700 (2020) (“Now, after *Apple Inc.*, the status of *Illinois Brick*’s status is uncertain. In fact, both the majority and dissent in *Apple Inc.* make arguments that seem to undermine the holding in *Illinois Brick*.”).

## CONCLUSION

In his dissent in *Kodak*, Justice Scalia warned that “because the sort of power condemned by the Court today is possessed by every manufacturer of durable goods . . . the Court’s opinion threatens to release a torrent of litigation and a flood of commercial intimidation that will do much more harm than good . . . .”<sup>215</sup> That prediction did not materialize in the aftermath of *Kodak*. Appellate courts narrowed the scope of the ruling, and the Supreme Court has yet to revisit the decision. However, digital platforms and their online app stores offer an opportunity to prove Justice Scalia right—albeit thirty years later. As an increasing amount of commerce flows through these virtual marketplaces, antitrust scrutiny and litigation are inevitable as there is too much money at stake. Understanding the nature of app stores is increasingly needed as antitrust cases, and other types of scrutiny proliferate—particularly given that there is a tendency to look for quick answers to complicated questions.<sup>216</sup> This Article offers a vertical control-based explanation for how app stores work, which then drives the analysis regarding aftermarkets and standing. Ultimately, if courts have a clearer understanding of the nature of these platforms, then the slew of online marketplace allegations can be properly categorized and framed, which raises the probability that efficiency-enhancing antitrust decisions will be made.

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215. *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 489 (1992).

216. *See, e.g.*, Ronald H. Coase, *Industrial Organization: A Proposal for Research*, in 3 *ECONOMIC RESEARCH: RETROSPECT AND PROSPECT: POLICY ISSUES AND RESEARCH OPPORTUNITIES IN INDUSTRIAL ORGANIZATION* 66, 70 (Victor R. Fuchs ed., 1972) (advancing the argument that the study of industries “would yield [the] best results if conducted in an atmosphere in which the scientific spirit is not contaminated by a desire (or felt obligation) to find quick solutions to difficult policy issues.”); Klein & Wiley, *supra* note 149, at 600 (“We believe it is important to understand the economic motivation and effect of business conduct before courts either condemn or immunize it.”).