

Notes

Google—Do Not Pass Go, Do Not Collect \$200: Why the Tech Giant Is a “Bad” Monopoly

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Congress enacted the Sherman Act in 1890 to promote competition and creativity in the marketplace. The Sherman Act prohibits agreements that restrain trade and lays out rules regarding monopoly power. This Note explores three distinct theories under which Google, one of the most successful technology companies in the world, could be found to have violated the Sherman Act. Specifically, in violation of Sections 1 and 2 of the Sherman Act, Google “ties” its products together and forces mobile device manufacturers to sign exclusive dealing agreements preventing them from purchasing products from Google’s competitors. Further, Google’s systematic obstruction of competing Android operating systems is a form of anticompetitive conduct in violation of Section 2 of the Sherman Act. This Note argues that Google is indisputably leveraging its market power to restrain trade and maintain its monopoly in various relevant markets.

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INTRODUCTION

Under U.S. antitrust laws, businesses may not take concerted private action to improperly interfere in the functioning of competitive markets.¹ In 1890, the Sherman Act, the principle statute at the center of U.S. antitrust policy, was designed to be a charter of economic liberty aimed at preserving competition in trade,² and a tool to protect the public from monopoly power.³ In 1914, the U.S. federal government created the Federal Trade Commission (FTC) to enforce antitrust laws.⁴ The FTC's mission is to "protect consumers and competition by preventing anticompetitive, deceptive, and unfair business practices . . . without unduly burdening legitimate business activity."⁵ A core tenet of U.S. antitrust policy is that unrestrained, unfettered interaction of competitive forces will yield the best allocation of economic resources and lowest prices for consumers, while simultaneously fostering an environment that is conducive to the preservation of our democratic political and social institutions.⁶

Section 1 of the Sherman Act prohibits contracts, combinations, and conspiracies "in restraint of trade or commerce."⁷ This means that firms are prohibited from agreeing amongst themselves to act in ways that harm the markets in which they participate. While the language of the statute is broad, courts have construed it narrowly, to preclude only contracts, combinations, and conspiracies that *unreasonably* restrain competition through undue restraints.⁸

Under Section 2 of the Sherman Act, it is illegal to monopolize, attempt to monopolize, or conspire with others to monopolize any part of trade or commerce.⁹ Section 2 forbids the use of monopolistic power by making it illegal for any single large business to try to exclude all or most of its competitors from the marketplace.

Courts have grappled with striking a balance between assuring adequate returns for innovation, protecting dominant firms' opportunities for efficiency, and foreclosing unnecessarily aggressive conduct likely to prolong monopolists'

1. See David Millon, *The Sherman Act and the Balance of Power*, 61 S. CALIF. L. REV. 1219, 1220, 1258 (1988) (discussing how two or more competitors might agree among themselves to suppress competition, thereby creating a monopoly in a market in which there had previously been rivalry and why these agreements should be held unenforceable).

2. See *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 4 (1958).

3. See Millon, *supra* note 1, at 1220, 1260.

4. See *The Antitrust Laws*, FED. TRADE COMMISSION, <https://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/antitrust-laws> (last visited Mar. 20, 2020).

5. *About the FTC*, FED. TRADE COMMISSION, <https://www.ftc.gov/about-ftc> (last visited Mar. 20, 2020).

6. See *N. Pac. Ry. Co.*, 356 U.S. at 4.

7. 15 U.S.C. § 1 (2018).

8. See, e.g., *Standard Oil Co. v. United States*, 221 U.S. 1, 60 (1911) (rationalizing that Congress did not intend Section 1 to restrain the right to make and enforce contracts that do not unduly restrain interstate or foreign commerce); see also *Bd. of Trade v. United States*, 246 U.S. 231, 241 (1918) ("Every board of trade and nearly every trade organization imposes some restraint upon the conduct of business by its members.").

9. 15 U.S.C. § 2 (2018).

income flow.¹⁰ Claims that allege violations of Sections 1 and 2 of the Sherman Act are evaluated on a case-by-case basis.¹¹ This process requires a fact-intensive analysis and appraisal of the evidence, and courts must focus their inquiries on the goal of protecting the competitive process from overly aggressive strategies.¹²

Additionally, the antitrust legal system faces a new set of challenges with the rise of technology and e-commerce markets.¹³ Issues of competition in high-technology industries have different characteristics compared to those of traditional markets, and courts must take these variances into account when considering allegations of Sherman Act violations.¹⁴ For example, high-technology companies like Google have the potential to grow, and have grown, extremely fast, and many of their products are free for consumers to use.¹⁵ Additionally, high-technology companies are able to price goods below-cost in order to build market share, and then expand into an array of adjacent businesses to build an online infrastructure that their rivals depend on, giving them access to the data their transactions generate.¹⁶ Courts must apply antitrust laws with sensitivity to special characteristics of high-technology industries and recognize the special role that competition plays in both stimulating innovation and in disseminating the benefits of innovation to consumers.¹⁷

Currently, mobile device manufacturers (“manufacturers”) that want to build and sell smartphones that run the latest version of the Android operating system (“Android OS” or “Android”), and who wish to pre-install popular Google mobile applications (“apps”), are required to sign contracts with Google.¹⁸ These contracts require manufacturers to pre-install certain Google apps as a condition for licensing other Google apps and Google’s version of Android OS, thereby functioning as a way for Google to integrate more of its services into Android.¹⁹ Additionally, Google offers revenue-sharing agreements (RSAs) to manufacturers, which ensure that Google Search,

10. See Lawrence A. Sullivan, *Section 2 of the Sherman Act and Vertical Strategies by Dominant Firms*, 21 SW. U. L. REV. 1227, 1262 (1992).

11. See *id.* at 1262–63.

12. See *id.*

13. See Clara Hendrickson & William A. Galston, *Big Technology Firms Challenge Traditional Assumptions About Antitrust Enforcement*, BROOKINGS (Dec. 6, 2017), <https://www.brookings.edu/blog/techtank/2017/12/06/big-technology-firms-challenge-traditional-assumptions-about-antitrust-enforcement/>.

14. Doris Karina Oropeza Mendoza, *Antitrust in the New Economy Case Google Inc. Against Economic Competition on Web*, 8 MEXICAN L. REV. 1, 14–16 (2016).

15. See Robert Levine, *Antitrust Law Never Envisioned Massive Tech Companies like Google*, BOS. GLOBE (June 13, 2018), <https://www.bostonglobe.com/ideas/2018/06/13/google-hugely-powerful-antitrust-law-job/E1eqlQ01g11DRM8I9Fxo/story.html>.

16. See *id.*

17. William J. Baer, Former Dir., Bureau of Competition, Speech at the American Bar Association, Sections of Business Law, Litigation, and Tort and Insurance Practice Conference: Antitrust Enforcement and High Technology Markets (Nov. 12, 1998), <https://www.ftc.gov/public-statements/1998/11/antitrust-enforcement-and-high-technology-markets>.

18. See *infra* Subpart II.B.

19. See *infra* Part II.

Google's internet search app, is the only default and pre-installed internet search on all devices manufacturers under contract will distribute.²⁰ Finally, by requiring manufacturers to sign anti-fragmentation agreements (AFAs) and taking steps to decrease the compatibility between its apps and competitors' versions of Android OS, Google obstructs the development and distribution of alternative versions of Android.²¹

Google's market strategy for its apps, internet search, and Android OS closely resembles Microsoft's strategy regarding its Windows operating system ("Windows OS") for personal computers (PCs), which resulted in a legal and reputational nightmare for Microsoft. As explained in greater detail, in 2001, the D.C. Circuit Court of Appeals held Microsoft liable for multiple violations of antitrust law.²² First, although the D.C. Circuit remanded the district court's conclusion that Microsoft was liable for illegal tying of its flagship Internet Explorer browser to its Windows OS, it provided a framework for analyzing a tying arrangement when the tying product is platform software.²³ Second, the court held that Microsoft's conduct in forming restrictive licensing agreements with manufacturers was illegal.²⁴ Third, Microsoft was found to have abused its monopoly power by taking steps to intentionally restrict the development of cross-platform programs for Java.²⁵

These striking parallels between Google's conduct and Microsoft's conduct raise legitimate antitrust concerns. During the *Microsoft* litigation, New York Attorney General Dennis Vacco aptly stated that "[i]t would be unfortunate if one company were allowed to control access to the Internet in violation of the antitrust laws, restricting consumer choice and stifling competition before it has a chance to develop."²⁶ His comment was aimed towards Microsoft; however, these fears are just as relevant today as they were twenty years ago. Google's Android OS is regarded as "the Windows of the mobile device era, powering nearly 80% of smartphones globally Windows commanded roughly 90 percent of the PC market in the 1990s."²⁷ Google's enormous influence is indisputable, and this Note proposes three theories under which Google may have restrained trade and maintained its monopoly in violation of Sections 1 and 2 of the Sherman Act.

20. See *infra* Part III.

21. See *infra* Part IV.

22. See *United States v. Microsoft Corp.*, 253 F.3d 34, 46 (D.C. Cir. 2001).

23. See *id.* at 89–95.

24. See *id.* at 61.

25. See *id.* at 75–77.

26. Richard B. McKenzie & William F. Shughart II, *Is Microsoft a Monopolist?*, 3 INDEP. REV. 165, 167 (1998) (internal quotation marks omitted) (quoting New York Attorney General Dennis Vacco).

27. Amir Efrati, *With Shades of Microsoft, Google Android Invites Antitrust Case*, INFO. (Oct. 16, 2014, 11:44 AM), <https://www.theinformation.com/articles/With-Shades-of-Microsoft-Google-Android-Invites-Antitrust-Case>.

I. THREE THEORIES OF GOOGLE'S SHERMAN ACT VIOLATIONS

In order to state a claim under Section 1 of the Sherman Act, a plaintiff must provide enough factual matter, taken as true, to suggest that (1) an agreement exists between parties and (2) the agreement constitutes an unreasonable restraint of trade.²⁸ The crucial question is whether the challenged conduct stems from independent decision-making or from an agreement.²⁹ “An agreement exists when there is a unity of purpose, a common design and understanding, a meeting of the minds, or a conscious commitment to a common scheme.”³⁰ A plaintiff must show that the defendant purposefully joined and participated in the conspiracy, by providing direct evidence, circumstantial evidence, or a combination of the two.³¹

In order to state a claim under Section 2 of the Sherman Act, a plaintiff must show that the defendant (1) possesses monopoly power and (2) uses that monopoly power to either foreclose competition, gain a competitive advantage, or destroy a competitor.³² The inquiry is whether the firm has aggressively suppressed competition on the merits, which is legal, or whether it has engaged in conduct that impairs competitive opportunity, distorts the competitive process, and makes market outcomes turn on power, which would be a violation of Section 2.³³ Thus, having a monopoly does not by itself violate Section 2—a firm violates Section 2 only when it maintains, or attempts to maintain, its monopoly by engaging in exclusionary conduct “as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.”³⁴ Therefore, there must be proof that the conduct harms the competitive process and competition in general.³⁵ Showing harm to one or more competitors is not sufficient.³⁶

In a case against Google, there are three viable theories of violations of Sections 1 and 2 of the Sherman Act. Each theory is addressed separately in the following parts of this Note. Part II addresses the first theory, that Google restrains trade and maintains its monopoly by tying the download of Google Play and Google's version of Android OS to the pre-installation of Google Search and Google Chrome. Part III focuses on the second theory, that Google restrains trade and maintains its monopoly by forcing mobile device manufacturers into

28. *See* *Am. Needle, Inc. v. Nat'l Football League*, 560 U.S. 183, 189–91 (2010).

29. *See* *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 553 (2007).

30. *W. Pa. Allegheny Health Sys., Inc. v. UPMC*, 627 F.3d 85, 99 (3d Cir. 2010).

31. *See id.*; *see also In re Processed Egg Prod. Antitrust Litig.*, 821 F. Supp. 2d 709, 720 (E.D. Pa. 2011).

32. *Aerotec Int'l v. Honeywell Int'l*, 836 F.3d 1171, 1183 (9th Cir. 2016) (citing *Eastman Kodak Co. v. Image Tech. Servs.*, 504 U.S. 451, 482–83 (1992)).

33. *See* *United States v. United Shoe Mach. Corp.*, 110 F. Supp. 295, 341 (D. Mass. 1953), *aff'd per curiam*, 347 U.S. 521 (1954); *see also* Sullivan, *supra* note 10, at 1229 (discussing the history of the formulation of courts' examination of power and conduct in monopolization cases).

34. *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966); *see also* *United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001).

35. *See* *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 605 (1985); *see also* *United States v. Dentsply Int'l*, 399 F.3d 181, 187 (3d Cir. 2005).

36. *See* *Microsoft Corp.*, 253 F.3d at 58.

exclusive dealing arrangements in which they are required to pre-install Google Search onto their devices. Part IV explores the third theory, that Google maintains its monopoly by inhibiting the development and distribution of alternative versions of Android OS.

II. TYING ARRANGEMENTS

A “tying arrangement” exists where a firm agrees to sell one product over which it has market power, contingent on the condition that the buyer also purchases a different product.³⁷ The product the buyer wants is referred to as the “tying product,” and the product the buyer is forced to take with the tying product is the “tied product.”³⁸ Anticompetitive tying arrangements have been illegal in the United States since 1917, and can be challenged as a restraint of trade under Section 1 of the Sherman Act and as an exclusionary act by a dominant firm under Section 2.³⁹ Anticompetitive tying arrangements are illegal because they limit the purchaser’s freedom to buy products from other sources,⁴⁰ thus inhibiting competition. In *Northern Pacific Railway Co.*, the Supreme Court explained the nefarious effects of tying arrangements:

[Tying arrangements] deny competitors free access to the market for the tied product, not because the party imposing the tying requirements has a better product or a lower price but because of his power or leverage in another market. At the same time buyers are forced to forego their free choice between competing products.⁴¹

There are four essential elements of a tying claim: (1) the tying and tied goods are two separate products; (2) the agreement to license one product is conditioned on the license of another product; (3) the seller has market power in the tying product market; and (4) the tying arrangement forecloses a substantial volume of commerce.⁴²

A. SEPARATE PRODUCTS

An illegal tying arrangement cannot exist unless the tying and tied products are separate.⁴³ To make that assessment, the Supreme Court has fashioned a test driven by evidence of producer behavior and consumer demand, rather than on a court’s own speculative, subjective effort to define boundaries of distinct products. This inquiry focuses on the character of the *demand* for the two products, rather than whether they were sold as a functionally integrated package.⁴⁴ The products can only be found separate if there is “sufficient

37. *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 5–6 (1958).

38. See Erik Hovenkamp & Herbert Hovenkamp, *Tying Arrangements and Antitrust Harm*, 52 ARIZ. L. REV. 925, 926 (2010).

39. A.B.A., 1 ANTITRUST LAW DEVELOPMENTS 174 (Jonathan I. Gleklen et al. eds., 7th ed. 2012).

40. *Id.*

41. *N. Pac. Ry. Co.*, 356 U.S. at 6.

42. *United States v. Microsoft Corp.*, 253 F.3d 34, 85 (D.C. Cir. 2001).

43. See generally *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984).

44. *Id.* at 19.

consumer demand so that it is efficient for a firm to provide [them] . . . separately.”⁴⁵

Under this test, products are considered to be “separate” if they could be profitably marketed separately.⁴⁶ This can be satisfied if the plaintiff can show that consumers want to purchase the products separately. If not, there is little risk that the tying arrangement would prevent separate sales of the products.⁴⁷ However, products can still be considered separate even if no consumer would want one without the other.⁴⁸ Hence, it is not a question of whether consumers need or want both products, or even whether consumers would want one without the other.⁴⁹ So long as there could be a viable market for sales of one of the products alone, they are considered separate.⁵⁰

In *Jefferson Parish*, a hospital entered into an exclusive contract with an anesthesiology firm, requiring every patient undergoing surgery at the hospital to use the services of the contracted anesthesiology firm.⁵¹ The Supreme Court held that anesthesiology and other hospital services are considered two separate products for the purposes of the tying analysis.⁵² The Court reasoned that even though no one would want surgery without anesthesia, people differentiate between anesthesiological services and other hospital services, and therefore the hospital’s arrangement involved the required purchase of two services that could otherwise be purchased separately.⁵³

Under a similar line of reasoning, the Supreme Court in *Eastman Kodak* held that spare parts used for repair or replacement and equipment service for copying machines are two separate products.⁵⁴ The Court concluded that there may be a demand for parts separate from service because at least some consumers would purchase service without parts, some service does not require parts, and some consumers would purchase parts without service.⁵⁵ Therefore, parts and service were considered two distinct products.⁵⁶

In a case against Google, the tying products are Google Play (an Android-compatible app store) and Google’s version of Android OS. The tied products are Google Search and Google Chrome, Google’s internet search app and mobile web browser app, respectively. Google’s version of Android OS is separate from

45. *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 462 (1992).

46. *Jefferson Par. Hosp. Dist. No. 2*, 466 U.S. at 21–22.

47. Alexandra Mitretodis, *What Constitutes a Separate Product?*, COMPETITION CHRON. (Dec. 6, 2017), <https://www.competitionchronicle.com/2017/12/what-constitutes-a-separate-product/>.

48. *Jefferson Par. Hosp. Dist. No. 2*, 466 U.S. at 19 n.30 (“We have often found arrangements involving functionally linked products at least one of which is useless without the other to be prohibited tying devices.”).

49. *Id.*

50. *Id.* at 21.

51. *Id.* at 4–5.

52. *Id.* at 25.

53. *Id.* at 23–24.

54. *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 462–63 (1992).

55. *Id.* at 463.

56. *Id.* at 462–63.

its apps because each has a separate market demand and distinct purpose.⁵⁷ Users can use Android OS without using Google apps, and instead use apps from other vendors. Other users may only want to use certain Google apps.⁵⁸ Each app has a separate name, installation package, and icon, and there is no technical reason why one app may require the installation of another.⁵⁹ During the *Microsoft* litigation, the district court ruled that Windows OS and Internet Explorer were separate products, recognizing that a browser program may be a separate product from an operating system because consumers would select their browser separately if given the option to choose.⁶⁰ Similarly, the General Court of the European Union (EU) found that Windows OS and Windows Media Player, a PC program, were separate products.⁶¹ The FTC has also recognized internet search as its own market.⁶² Moreover, in *Pepper v. Apple*, the Apple app store, which is similar to Google Play but compatible only with the Apple mobile device operating system, was recognized as a separate product from Apple's mobile operating system, iOS.⁶³ Therefore, individual apps for internet search and web browsing, Android-compatible app stores, and mobile device operating systems constitute separate products for the purpose of a tying analysis.

B. COERCION

Where a consumer is free to take either product by itself, there is no tying.⁶⁴ However, if a firm has made the joint purchase of two products the only viable option, a jury may find that the defendant has effectively tied the two products together.⁶⁵ Some proof of coercion is required to establish that a buyer was forced to purchase a product that the buyer did not want.⁶⁶ Copies of Google's Mobile Application Distribution Agreement (MADA) provide proof of

57. Benjamin Edelman, *Leveraging Market Power Through Tying: Does Google Behave Anti-Competitively*, BEN EDELMAN (May 12, 2014), <https://www.benedelman.org/publications/google-tying-2014-05-12.pdf>.

58. *Id.*

59. *Id.* at 28.

60. See *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30, 49–51 (D.D.C. 2000), *aff'd in part, rev'd in part*, 253 F.3d 34, 94 (D.C. Cir. 2001) (reversing the liability finding of the district court on the per se tying theory and remanding for further consideration of the tying claim under the rule of reason). The case settled without a final determination on the tying theory; however, the Circuit Court's discussion of tying is applicable to Google. See Richard Richtmyer, *No Microsoft Breakup: U.S.*, CNN MONEY (Sept. 6, 2001), <https://money.cnn.com/2001/09/06/technology/microsoft/>.

61. Edelman, *supra* note 57, at 9.

62. See generally F.T.C. FILE NO. 071-0170, STATEMENT OF FEDERAL TRADE COMMISSION CONCERNING GOOGLE/DOUBLECLICK (2007), https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf (distinguishing between the search advertising market and other online advertising markets and concluding that the search market is separate).

63. See *In re Apple iPhone Antitrust Litig.*, 846 F.3d 313, 323–24 (9th Cir. 2017).

64. *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 6 (1958).

65. See *Tricom, Inc. v. Elec. Data Sys. Corp.*, 1996 U.S. Dist. LEXIS 20158, at *16 (E.D. Mich. Mar. 6, 1996) (“To prove an illegal tie, a plaintiff must show that the purchase of the tying product together with the tied product was the purchaser's only economically viable option.”).

66. See *Paladin Assocs. v. Mont. Power Co.*, 328 F.3d 1145, 1159 (9th Cir. 2003).

coercion.⁶⁷ Key provisions of the MADA that show manufacturers must agree to install all of the apps Google specifies include:

“Devices may only be distributed if all Google Applications . . . are pre-installed on the Device.”⁶⁸

“Company will preload all Google Applications approved in the applicable Territory or Territories on each Device.”⁶⁹

“Search must be set as the default search provider for all Web search access points on the Device.”⁷⁰

Installing Google Search and Google Chrome is a prerequisite to installing Google Play and Google’s version of Android.⁷¹ If manufacturers want a license to pre-load one Google app, they have to take others along with it. Courts have found that the requisite coercion can be proven by evidence of a contract.⁷² Therefore, these MADA provisions are sufficient to show that in order to distribute Google Play and Google’s Android OS, manufacturers are forced to select the only viable option—the pre-installation of Google Search and Google Chrome.

C. MARKET POWER IN THE RELEVANT MARKETS

A market consists of all products in a geographic area that exert competitive constraints on each other.⁷³ A “relevant market,” for the purpose of analyzing market power, includes all products that are reasonably interchangeable by consumers for the same purposes and is defined in terms of two components: the relevant geographic market and the relevant product market.⁷⁴

The relevant geographic market identifies the geographic area in which businesses compete in marketing their products.⁷⁵ It must “‘correspond to the commercial realities’ of the industry and be economically significant.”⁷⁶ In some situations, the relevant geographic market may encompass an entire country, and in others, it may constitute a single metropolitan area.⁷⁷ For many high-

67. See Class Action Complaint at 32–33, *Feitelson v. Google*, 80 F. Supp. 1019 (N.D. Cal. 2014) (No. 5:14-cv-02007).

68. Exhibit B to Class Action Complaint at 3, *Feitelson v. Google*, 80 F. Supp. 1019 (N.D. Cal. 2014) (No. 5:14-cv-02007).

69. *Id.* at 4.

70. *Id.*

71. *Id.* at 3.

72. See *Ungar v. Dunkin’ Donuts of Am.*, 531 F.2d 1211, 1224 (3d Cir. 1976); see also *Amerinet, Inc. v. Xerox Corp.*, 972 F.2d 1483, 1500 (8th Cir. 1992) (“Typically, an express refusal to sell the tying product without the tied product is the basis for an illegal tying arrangement.”).

73. See *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 395 (1956).

74. See *id.*; see also *F.T.C. v. Freeman Hosp.*, 69 F.3d 260, 268 (8th Cir. 1995).

75. *F.T.C. v. Sysco Corp.*, 113 F. Supp. 3d 1, 24 (D.D.C. 2015) (citing *F.T.C. v. Arch Coal, Inc.*, 329 F. Supp. 2d 109, 119 (D.D.C. 2004)).

76. *Brown Shoe Co. v. United States*, 370 U.S. 294, 336–37 (1962) (footnote omitted) (quoting *Am. Crystal Sugar Co. v. Cuban-Am. Sugar Co.*, 152 F. Supp. 387, 398 (S.D.N.Y. 1957)).

77. *Id.* at 337.

technology products, including those that Google provides, the relevant geographic market is at the very least the entire United States, if not the entire world.⁷⁸

The relevant product market identifies the competing products at issue.⁷⁹ Products are considered to be in the same relevant market if consumers would consider them potential alternatives to each other—in other words, if a consumer can substitute an alternative product when the price of another product has increased, the products would likely be considered in the same relevant market. For the purposes of Google’s market power analysis, with respect to its tying arrangements, the relevant product markets are internet search apps, browser apps, Android-compatible app stores, and Android operating systems.

The concepts of “market power” and “monopoly power” both refer to anticompetitive economic power that can ultimately compromise consumer welfare.⁸⁰ Although the Supreme Court has yet to write an opinion that deliberately and explicitly contrasts these two terms, its chosen language in separate cases has articulated standards for each.⁸¹ In *NCAA v. Board of Regents*, the Court defined market power as “the ability to raise prices above those that would be charged in a competitive market.”⁸² In *United States v. E. I. du Pont de Nemours & Co.*, the Court defined monopoly power as “the power to control prices or exclude competition” in the relevant market.⁸³ However, because the Supreme Court has been inconsistent about whether these two concepts are similar or distinct,⁸⁴ they will be used interchangeably for the purposes of this Note.

Market power, or monopoly power, is the power to exclude competition in the relevant market.⁸⁵ If a consumer could readily use alternatives in the relevant product market, an illegal monopoly does not exist.⁸⁶ In other words, there is monopoly power when a product is controlled by one firm and there are no substitutes available.⁸⁷ In the United States, a market share in excess of 70% generally establishes a prima facie case of monopoly power,⁸⁸ and an allegation

78. See *United States v. AT&T Inc.*, 310 F. Supp. 3d 161, 197 (D.D.C. 2018) (discussing how multichannel video distribution markets are located nationwide, and it is therefore appropriate to derive a measure of nationwide economic harm).

79. See *Sysco Corp.*, 113 F. Supp. 3d at 24.

80. See Thomas G. Krattenmaker et al., *Monopoly Power and Market Power in Antitrust Law*, 76 GEO. L.J. 241, 246 (1987).

81. *Id.* at 246–47.

82. *Nat’l Collegiate Athletic Ass’n v. Bd. of Regents*, 468 U.S. 85, 109 n.38 (1984).

83. *United States v. E. I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956).

84. See Krattenmaker et al., *supra* note 80, at 246.

85. Samuel R. Miller, *If Google Is a “Bad” Monopoly, What Should Be Done?*, LAW360 (Oct. 22, 2013, 7:46 PM), <https://www.law360.com/articles/481993>.

86. *E. I. du Pont de Nemours & Co.*, 351 U.S. at 394.

87. *Id.*

88. See A.B.A., *supra* note 39, at 231.

that a firm enjoys a 50–75% market share has been sufficient to state a monopolization claim.⁸⁹

As of September 2019, in the United States, Google held 94.26% of the mobile search engine market share,⁹⁰ and 40.21% of the mobile browser market share.⁹¹ With regard to Google's market share in the Android-compatible app stores market, Google Play delivers over 95% of apps downloaded to Android phones.⁹² According to Statcounter, an independent web analytics company, as of September 2019, Android had 44.15% of the mobile device operating system market share in the United States and 76.24% of the mobile device operating system market share worldwide.⁹³ Statista, an online statistics and market research portal, lists Google's market share in the mobile device operating system market slightly higher. Statista reports that in June 2019, 51.1% of smartphone subscribers in the United States were using a Google Android device.⁹⁴ In 2017, Android's market share worldwide was 85.9%.⁹⁵ Android's market share in the mobile device operating system market is by far the most used operating system worldwide. Google's dominance is evidence of its power in the markets of its tying products, Google Search and Google Chrome.

D. FORECLOSURE OF COMMERCE

For a tying arrangement to be illegal, it must foreclose a substantial amount of commerce in the tied product.⁹⁶ Conclusory allegations of anticompetitive effect are insufficient without supporting facts that show how competition in the tied markets has actually been harmed, and that demonstrate how consumers have suffered injury as a result of choices being limited because of the tied

89. *LG Elecs. v. ASKO Appliances*, 2010 U.S. Dist. LEXIS 31571, at *14 (D. Del. Mar. 29, 2010).

90. See *Mobile Search Engine Market Share United States of America—Dec. 2018–Dec. 2019*, STATCOUNTER, <http://gs.statcounter.com/search-engine-market-share/mobile/united-states-of-america> (last visited Mar. 20, 2020).

91. See *Mobile Search Engine Market Share United States of America—Dec. 2018–Dec. 2019*, STATCOUNTER, <http://gs.statcounter.com/search-engine-market-share/mobile/united-states-of-america> (last visited Mar. 20, 2020); see also *Mobile Browser Market Share United States of America—Dec. 2018–Dec. 2019*, STATCOUNTER, <http://gs.statcounter.com/browser-market-share/mobile/united-states-of-america> (last visited Mar. 20, 2020).

92. Peter Sayer, *Google Faces \$5B Fine Over Android Browser and Search Engine Ties*, COMPUTERWORLD (July 18, 2018, 8:18 AM), <https://www.computerworld.com/article/3290471/google-faces-5b-fine-over-android-browser-and-search-engine-ties.html>.

93. See *Mobile Operating System Market Share United States of America—Dec. 2018–Dec. 2019*, STATCOUNTER, <http://gs.statcounter.com/os-market-share/mobile/united-states-of-america> (last visited Mar. 20, 2020); see also *Mobile Operating System Market Share Worldwide—Dec. 2018–Dec. 2019*, STATCOUNTER, <http://gs.statcounter.com/os-market-share/mobile/worldwide> (last visited Mar. 20, 2020).

94. See Arne Holst, *Subscriber Share Held by Smartphone Operating Systems in the United States from 2012 to 2019*, STATISTA (Nov. 20, 2019), <https://www.statista.com/statistics/266572/market-share-held-by-smartphone-platforms-in-the-united-states/>.

95. See Arne Holst, *Global Market Share Held by Smartphone Operating Systems from 2009 to 2017*, STATISTA (June 4, 2019), <https://www.statista.com/statistics/263453/global-market-share-held-by-smartphone-operating-systems/>.

96. *N. Pac. Ry. Co. v. United States*, 356 U.S. 1, 11 (1958).

products.⁹⁷ There is compelling evidence that Google's ties thwart competition in the markets for the tied products.

Google has substantially hindered market access of creators of rival Android-compatible app stores by tying Google Search and Google Chrome with Google Play. While Android apps are available from a variety of Android-compatible app stores, Google only makes its Google apps, which are popular with consumers, available through Google Play.⁹⁸ With Google Play delivering over 95% of total apps downloaded to all Android phones worldwide,⁹⁹ it is no surprise that the European Commission ("Commission") described Google Play as a "must have" feature for manufacturers.¹⁰⁰ It is by far the most important app store for the Android operating system.

Companies like Amazon have been unsuccessful in persuading big-name manufacturers to produce devices that connect to its app store.¹⁰¹ Amazon's Fire OS is an Android customization capable of running most of Google's apps as well as other apps in Google Play.¹⁰² However, since it is not Google's version of the Android operating system, manufacturers that program their devices with Amazon Fire OS cannot pre-install their devices with Google Play.¹⁰³ Only Google Play permits manufacturers to offer users comprehensive access to substantially all apps, including Google's apps.¹⁰⁴ Therefore, devices without Google Play pre-installed are unattractive to consumers, consequently reducing Amazon Fire OS's desirability to manufacturers.¹⁰⁵ By engaging in tying arrangements, Google is leveraging its dominance of the Android-compatible app store market to achieve an unfair advantage in the more competitive markets for internet search and mobile browsing apps.¹⁰⁶

Additionally, fewer than 10% of Android phone users download an alternative browser app to the pre-installed Google Chrome app, and fewer than 1% download an alternative search app to the pre-installed Google Search app.¹⁰⁷ In 2016, 96% of all internet search queries were made using Google Search on devices that had it pre-installed.¹⁰⁸ This percentage fell to less than 25% on Windows Mobile, Microsoft's mobile device operating system, where

97. *In re Webkins Antitrust Litig.*, 695 F. Supp. 2d 987, 997 (N.D. Cal. 2010).

98. Benjamin Edelman & Damien Geradin, *Android and Competition Law: Exploring and Assessing Google's Practices in Mobile*, 12 EUR. COMPETITION J. 159, 164 (2016).

99. See Sayer, *supra* note 92.

100. Alexandre de Cornière & Greg Taylor, *On the Economics of the Google Android Case*, VOXEU (Aug. 15, 2018), <https://voxeu.org/article/economics-google-android-case>.

101. See Sayer, *supra* note 92.

102. Edelman, *supra* note 57, at 64.

103. *Id.*

104. Edelman & Geradin, *supra* note 98, at 171.

105. *Id.*

106. Cornière & Taylor, *supra* note 100.

107. See Sayer, *supra* note 92.

108. See Alex Barker & Mehreen Khan, *EU Fines Google Record €4.3bn Over Android*, FIN. TIMES (July 18, 2018, 1:53 PM), <https://www.ft.com/content/56ae8282-89d7-11e8-b18d-0181731a0340>; see also Cornière & Taylor, *supra* note 100.

Google Search was not pre-installed.¹⁰⁹ These statistics show that the vast majority of users do not download competing apps and tend to simply use those apps that are pre-installed on their device.¹¹⁰ Competitors to Google's search engine and browser are unable to compete on the merits and are kept out of the market by Google's restrictions.¹¹¹ Google's ties obstruct competitors' efforts to make deals with manufacturers because manufacturers are not able to provide them with default installation or exclusive placement.¹¹² Competitors are forced to lower their prices and that reduction in value may make the deal unworthy of pursuing.¹¹³ Thus, Google's tying arrangements foreclose a substantial amount of commerce by unfairly eliminating the ability of its rivals to compete.

E. HARM TO CONSUMERS

By imposing restrictions on Google Play and Google's version of Android OS, Google harms consumers. Google's ties insulate Google from competition, which harms consumers because the lack of competing vendors disincentivizes Google from offering greater benefits to consumers.¹¹⁴ Some of these benefits may include fewer advertisements or greater security protections against deceptive offers.¹¹⁵ Users are deprived of these potential benefits because Google's ties shield it from usual competitive pressures.¹¹⁶ Moreover, by foreclosing competing vendors, Google's ties deprive consumers of choice in their internet search provider.¹¹⁷ Because Google ties its apps with each other and with its version of Android, consumers do not have an option to buy or download apps or operating systems elsewhere.

If a manufacturer wants to substitute a Google app with a comparable app developed by one of Google's competitors, it would not be allowed to include any of Google's apps under Google's MADA restrictions.¹¹⁸ There are many reasons why a manufacturer might want to contract with another developer and use a non-Google app. There may be alternatives that are faster, easier to use, or provide more robust privacy protection.¹¹⁹ Thus, Google's ties prevent third-party vendors from outcompeting Google's apps on the merits, even if they offer apps that are better than Google's offering.¹²⁰ This harms consumers because users' devices may not be programmed to function at their highest ability.

109. Cornière & Taylor, *supra* note 100.

110. *See* Barker & Khan, *supra* note 108.

111. *See* Sayer, *supra* note 92.

112. *See* Edelman & Geradin, *supra* note 98, at 171.

113. *Id.* at 172.

114. *See* Edelman, *supra* note 57, at 25.

115. *See* Benjamin Edelman, *Secret Ties in Google's "Open" Android*, BEN EDELMAN (Feb. 13, 2014), <https://www.benedelman.org/news-021314/>.

116. *Id.*

117. Nicholas Economides, *What Google Can Learn from Microsoft's Antitrust Problems*, FORTUNE (July 19, 2016, 1:00 PM), <http://fortune.com/2016/07/17/europe-google-antitrust/>.

118. *See* discussion *supra* notes 68–70.

119. *See* Edelman, *supra* note 115.

120. *See id.*

Additionally, due to Google Play's popularity, it has become necessary for manufacturers to ensure that Google Play is pre-installed on their devices.¹²¹ If a consumer purchases a device without Google Play pre-installed, the device will lack easy installation of desired Google apps or other apps that are only available through Google Play.¹²² Users may risk security vulnerabilities or be forced to perform time-consuming manual downloads in order to download those apps.¹²³ These tying restrictions cause users to disfavor Android devices that do not have Google Play pre-installed, which reinforces manufacturers' need to agree to Google's tying arrangements, perpetuating Google's dominance.¹²⁴

Moreover, Google's current conduct and Microsoft's conduct leading up to the *Microsoft* case is virtually identical.¹²⁵ In 2001, Windows OS, created and distributed by Microsoft, was the operating system that ran on more than 90% of PCs.¹²⁶ Microsoft required PC manufacturers to pre-install certain Microsoft programs on their devices, including Windows Media Player and Internet Explorer, as a condition of installing Windows OS.¹²⁷ These programs were provided free-of-charge to consumers with the purchase of a PC that ran on Windows OS.¹²⁸ The D.C. Circuit found that there was strong evidence that consumers would not switch from the default Windows Media Player or Internet Explorer, and held that Microsoft's ties were anticompetitive because they were capable of foreclosing access to a market for goods or services.¹²⁹

Similarly, Google ties its apps to Google Play and its version of Android OS.¹³⁰ If a manufacturer wants to pre-install these, they must first install Google Search and Google Chrome, for which competitive alternatives exist.¹³¹ Consequently, Google's practices have reduced incentives for manufacturers to pre-install competing search and browser apps, and for users to download such apps, effectively inhibiting rivals from competing with Google. Therefore, Google has likely violated Sections 1 and 2 of the Sherman Act by tying Google Play and Google's Android OS to the pre-installation of Google Search and Google Chrome.

121. Edelman & Geradin, *supra* note 98, at 171.

122. Edelman, *supra* note 57, at 64.

123. *Id.*

124. *Id.* at 64–65.

125. See *FairSearch Google Android Decision Press Pack*, FAIRSEARCH (July 18, 2018), <http://fairsearch.org/fairsearch-google-android-decision-press-pack-18-july-2018/>.

126. See Efrati, *supra* note 27.

127. See *United States v. Microsoft Corp.*, 253 F.3d 34, 84–85 (D.C. Cir. 2001).

128. *Id.*

129. *Id.* at 89.

130. See *FairSearch Google Android Decision Press Pack*, *supra* note 125.

131. *Id.*

III. EXCLUSIVE DEALING ARRANGEMENTS WITH MANUFACTURERS

Illegal exclusive dealing is an “agreement between a vendor and a buyer that prevents the buyer from purchasing a given good from any other vendor,” thereby foreclosing competition.¹³² Historically, in determining whether an exclusive dealing arrangement violated the Sherman Act, courts strictly focused on foreclosure percentage.¹³³ Since the Supreme Court’s 1961 decision in *Tampa Electric*, courts have focused the analysis on whether the arrangement threatens to create or enhance market power, leading to an anticompetitive outcome.¹³⁴

In order to show a violation of Section 1 by exclusive dealing, a plaintiff must define the relevant market and demonstrate that there is substantial foreclosure in the relevant market due to the agreements.¹³⁵ In order to show a violation of Section 2 by exclusive dealing, a plaintiff must show the defendant has monopoly power in the relevant market and that the agreements were anticompetitive, or exclusionary, meaning they contributed to the maintenance of the monopoly power.¹³⁶

Google offers RSAs to manufacturers of Android-based devices in exchange for exclusive default pre-installation of Google Search.¹³⁷ These agreements prohibit manufacturers from pre-installing competing search engines on *any* of the devices they sell to consumers in exchange for payments.¹³⁸ Consequently, manufacturers pre-install Google Search as the *only* search engine on *all* of their devices.¹³⁹

A. MARKET POWER IN THE INTERNET SEARCH MARKET

The first step in the analysis of a potential exclusive dealing arrangement is defining the relevant market.¹⁴⁰ The relevant product market is internet search, and the relevant geographic market is nationwide or worldwide because internet search is a high-technology product.¹⁴¹ Ever since the introduction of Google Search in 1997, Google has dominated the worldwide search engine market, and as of July 2019, Google had 88.61% market share.¹⁴² In July 2019, market leader

132. *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 996 (9th Cir. 2010).

133. *See A.B.A.*, *supra* note 39, at 215.

134. *See id.*

135. *See United States v. Microsoft Corp.*, 253 F.3d 34, 69 (D.C. Cir. 2001).

136. *See id.* at 51.

137. Federico Etro & Cristina Caffarra, *On the Economics of the Android Case*, 13 EUR. COMPETITION J. 282, 288 (2017).

138. *Id.*

139. *Id.*

140. *Microsoft Corp.*, 253 F.3d at 69; *see also supra* Subpart II.C.

141. *See supra* Subpart II.C.

142. *See* J. Clement, *Worldwide Desktop Market Share of Leading Search Engines from January 2010 to July 2019*, STATISTA (Dec. 3, 2019), <https://www.statista.com/statistics/216573/worldwide-market-share-of-search-engines/>.

Google generated 62.5% of all internet search queries,¹⁴³ and accounted for 92.74% of the mobile internet search market in the United States.¹⁴⁴ As evidenced by the statistics above, Google clearly possesses market power in the relevant market—the internet search market.

B. FORECLOSURE OF COMMERCE

Courts evaluate a variety of market conditions in assessing whether an exclusive agreement threatens harm to competition. Their inquiry generally focuses on competitors' ability to reach the market in the face of the exclusive deal.¹⁴⁵ Injury to competition “does not mean a simple loss of business or even the demise of a competitor but an impairment of the competitive structure of the market.”¹⁴⁶ A majority of courts agree that the minimum percent of foreclosure required is 40%.¹⁴⁷ The exclusive arrangement must not impose practical restrictions on a manufacturer's freedom to purchase from a competitor; if competitors cannot circumvent the exclusive arrangement to reach the market, the court may conclude the arrangement harms competition.¹⁴⁸ Binding agreements forcing manufacturers to configure Google Search as the default search engine position Google to sustain and grow its monopoly in the internet search market. As Google's Senior Vice President of Product Management & Marketing said:

[M]ore users more information, more information more users, more advertisers more users, more users more advertisers, it's a beautiful thing, lather, rinse, repeat, that's what I do for a living. So that's[] [why] someone alluded to *the engine that can't be stopped*.¹⁴⁹

This is a clear expression of Google's plan to leverage its power in the internet search market—Google's RSAs have succeeded in making it exceedingly difficult for any other mobile internet search app to gain traction.

An example of the impact these exclusive deals have had on competitors in the internet search market are the deals between Google and Apple.¹⁵⁰ In

143. See J. Clement, *Share of Search Queries Handled by Leading U.S. Search Engine Providers as of July 2019*, STATISTA (Jan. 7, 2020), <https://www.statista.com/statistics/267161/market-share-of-search-engines-in-the-united-states/>.

144. See J. Clement, *Market Share of Selected Leading Mobile Search Providers in the United States from October 2012 to October 2019*, STATISTA (Dec. 3, 2019), <https://www.statista.com/statistics/511358/market-share-mobile-search-usa/>.

145. See A.B.A., *supra* note 39, at 216.

146. *Stop & Shop v. Blue Cross & Blue Shield*, 373 F.3d 57, 66 (1st Cir. 2004) (discussing that a showing of injury to competition is almost always required because an agreement that caused no harm would not be worth condemning).

147. See *infra* text accompanying note 173.

148. See A.B.A., *supra* note 39, at 217.

149. Jonathan Rosenberg, Google SVP of Product Mgmt & Mktg, Speech at Claremont McKenna College: Inside the Black Box: Technology and Innovation at Google (Feb. 27, 2008, 12:00 PM) (transcript available at https://static.googleusercontent.com/media/www.google.com/en/press/podium/pdf/20080227_Jonathan_Rosenberg_Technology_Innovation.pdf) (emphasis added).

150. See FAIRSEARCH, GOOGLE'S TRANSFORMATION FROM GATEWAY TO GATEKEEPER: HOW GOOGLE'S EXCLUSIONARY AND ANTICOMPETITIVE CONDUCT RESTRICTS INNOVATION AND DECEIVES CONSUMERS 35

exchange for pre-installing Google Search as the default internet search on Apple's iPhone, Google made large payments to Apple in 2007.¹⁵¹ Then, in 2014, Google was estimated to have paid \$1 billion to Apple to be the only default search engine on iPhones and iPads.¹⁵² These deals were significant because approximately 33 million iPhones were purchased in the United States in 2014,¹⁵³ and by March 2017, the number of iPhones sold worldwide grew to 1.16 billion.¹⁵⁴ By locking up the primary source of queries on mobile devices through an exclusive search default deal, Google eliminated future sources of competition and foreclosed rival search engines from fairness in the marketplace by preventing them the opportunity for distribution on Apple products.¹⁵⁵

In 2013, the FTC concluded an extensive investigation into allegations that Google entered into exclusive agreements for the distribution of Google Search, but decided not to take action against Google because Google agreed to take steps to change some of its suspect business practices.¹⁵⁶ However, more recently, in July 2018, the Commission fined Google €4.34 billion for breach of EU antitrust law.¹⁵⁷ One of the violations was due to Google's illegal payments to manufacturers for exclusive pre-installation of Google Search across their entire portfolio of devices that ran on Android OS.¹⁵⁸ The Commission found that these payments foreclosed competition by significantly reducing manufacturers' incentives to contract with Google's competitors and pre-install their apps.¹⁵⁹ The Commission's July 18, 2018 Press Release provides insight into the findings of the investigation.

The Commission's investigation showed that a rival search engine would have been unable to compensate a device manufacturer . . . for the loss of the revenue share payments from Google and still make profits. That is because, even if the rival search engine was pre-installed on only some devices, they would have to compensate the device manufacturer or mobile network operator for a loss of revenue share from Google across all devices.¹⁶⁰

(2011), <http://www.fairsearch.org/wp-content/uploads/2011/10/Googles-Transformation-from-Gateway-to-Gatekeeper.pdf>.

151. *Id.*

152. Etro & Caffarra, *supra* note 137, at 288.

153. *iPhone Sales Stats*, FINDER, <https://www.finder.com/iphone-sales-statistics> (last updated June 29, 2018).

154. Niall McCarthy, *Apple Has Sold 1.2 Billion iPhones Over the Past 10 Years [Infographic]*, FORBES (June 29, 2017, 8:12 AM), <https://www.forbes.com/sites/niallmccarthy/2017/06/29/apple-has-sold-1-2-billion-iphones-over-the-past-10-years-infographic/#6723812042f8>.

155. *See* FAIRSEARCH, *supra* note 150, at 35.

156. *See* Press Release, Fed. Trade Comm'n, Google Agrees to Change Its Business Practices to Resolve F.T.C. Competition Concerns in the Markets for Devices Like Smart Phones, Games and Tablets, and in Online Search (Jan. 3, 2013), <https://www.ftc.gov/news-events/press-releases/2013/01/google-agrees-change-its-business-practices-resolve-ftc>.

157. *See* Press Release, European Comm'n, Antitrust: Commission Fines Google €4.34 Billion for Illegal Practices Regarding Android Mobile Devices to Strengthen Dominance of Google's Search Engine (July 18, 2018), http://europa.eu/rapid/press-release_IP-18-4581_en.htm.

158. *See id.*

159. *See id.*

160. *Id.*

This makes clear that Google's payments were conditioned on the manufacturer pre-installing *only* Google Search across *all* of the Android devices sold by that manufacturer, a central determination in finding Google's conduct illegal. The Commission's rationale should be taken into account in a substantial foreclosure analysis.

Moreover, in 2013, around the time when the FTC concluded its investigation, Google had an almost 10% smaller share of the mobile internet search market in the United States than it does today.¹⁶¹ In July 2013, Google accounted for 79.7% of the market, compared to 88.6% in October 2018.¹⁶² Additionally, following the EU's record-breaking antitrust fine imposed on Google on July 18, 2018, FTC Chairman, Joseph Simons, released a statement saying he would "take a close look" at the Commission's decision.¹⁶³ The combination of (1) the FTC's willingness to take another look at Google's market position and changes in its business practices, (2) its growth since the close of the FTC's last investigation in 2013, and (3) the EU's €4.34 billion fine imposed in July 2018, altogether signal that Google's exclusive dealing arrangements may well have foreclosed a substantial portion of the internet search market.

C. HARM TO CONSUMERS

Google's exclusive deals harm consumers by limiting users' access to competing mobile search engines. Although consumers could download and use substitute search engines, Google's agreements with manufacturers reduce consumers' ability to use and experiment with different search engines due to a variety of factors such as switching costs, difficulty in accessing them, and limited storage on their devices.¹⁶⁴ The quality of consumers' internet searches also suffers. If manufacturers were free to choose a default search engine other than Google Search, the quality of internet search for users would improve overall because search engines become smarter and more effective as they process greater numbers of search queries.¹⁶⁵ A vast majority of users do not download competing apps and simply use the search engine that is pre-installed by the manufacturer.¹⁶⁶ Therefore, search engines that are set as the default on a device are used significantly more frequently than non-default search engines, while competing search engines suffer from disuse because consumers would have to download them and they lack opportunities to become more effective.

161. See Clement, *supra* note 144.

162. See *id.*

163. See Greg Sterling, *F.T.C. Says It Will Take a "Close Look" at EU Antitrust Fine Against Google*, MARKETING LAND (July 18, 2018, 5:08 PM), <https://marketingland.com/ftc-says-it-will-take-a-close-look-at-eu-antitrust-fine-against-google-244607>.

164. Etro & Caffarra, *supra* note 137, at 289.

165. See Class Action Complaint, *supra* note 67, at 2.

166. See *supra* text accompanying note 110.

Although firms and manufacturers may have procompetitive justifications for exclusive arrangements—such as ensuring product distributors do not pass off inferior products as their own, creating reliable and steady outlets for distributors, and encouraging distributors to promote the manufacturers' products—the harm to consumers created by Google's exclusive deals outweighs any potential justification. Moreover, in its defense in the recent EU antitrust case, Google claimed that its “payments based on exclusivity were necessary to convince device manufacturers and mobile network operators to produce devices for the Android ecosystem.”¹⁶⁷ The Commission dismissed this claim.¹⁶⁸

If Google's competitors were able to secure contracts with manufacturers in which their internet search products were set as the default, competitors' search engines would become more effective as they process more queries. This threat would push Google to utilize resources and make an effort to improve Google Search. Instead, Google's RSAs allow it to circumvent these potential costs by hamstringing manufacturers and blocking competitors from effectively engaging in the internet search market, to the detriment of consumers. Therefore, it is likely that Google has restrained trade in violation of Section 1 of the Sherman Act, and has maintained its monopoly in violation of Section 2, by forcing manufacturers into these exclusive dealing arrangements.

D. MONOPOLY MAINTENANCE THROUGH EXCLUSIVE DEALS

Exclusive dealing raises competitive concerns, so even if a dominant firm is not found to have violated Section 1 of the Sherman Act, it may still violate Section 2.¹⁶⁹ This is because the minimum amount of foreclosure required to suggest a Section 1 violation for exclusive dealing has dramatically increased over time.¹⁷⁰ In 1949, when the Supreme Court addressed exclusive dealing in *Standard Oil Co.*, it held that a 6.7% foreclosure of a market was unlawful.¹⁷¹ In contrast, in her 1984 *Jefferson Parish* concurrence, Justice O'Connor expressed no concern with a situation in which a firm with a 30% market share had exclusive dealing arrangements.¹⁷² Since *Jefferson Parish*, courts have said that the standard minimum percentage of foreclosure required is 40%, favoring defendants in exclusive dealing cases.¹⁷³ Courts have credited multiple factors, such as procompetitive justifications, duration of exclusivity, and ease of termination of the agreement in making the foreclosure standard more difficult

167. See European Comm'n, *supra* note 157.

168. See *id.*

169. See *United States v. Microsoft Corp.*, 253 F.3d 34, 70 (D.C. Cir. 2001).

170. Steve Calkins, Professor of Law and Dir. of Graduate Studies at Wayne State Univ. Law Sch., Speech at Hous. B. Ass'n, Evaluating the Competitive Effects of Exclusive Dealing Agreements (June 24, 2005), https://www.americanbar.org/content/dam/aba/publishing/antitrust_source/.Nov05_Telesem11_29.authcheckdam.pdf.

171. See *Standard Oil Co. v. United States*, 337 U.S. 293, 305 (1949).

172. See *Jefferson Par. Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 45–46 (1984) (O'Connor, J., concurring).

173. See Calkins, *supra* note 170.

for plaintiffs to overcome. Despite this challenge, Google's exclusive deals allow it to maintain its monopoly in violation of Section 2, even if the deals do not illegally restrain trade under Section 1.

The *Microsoft* case provides an example of where a firm was held liable under Section 2 for exclusive dealing, but not Section 1.¹⁷⁴ At the trial court level, the plaintiff in *Microsoft* lost on its Section 1 exclusive dealing claim.¹⁷⁵ The court ruled that because rivals were not completely barred from reaching consumers, Microsoft did not illegally restrain trade through its exclusive agreements with manufacturers.¹⁷⁶ On appeal, however, the D.C. Circuit held that Microsoft violated Section 2 because its exclusive deals were illegal anticompetitive acts of monopoly maintenance.¹⁷⁷

In its opinion, the D.C. Circuit addressed the differences between exclusive dealing under Sections 1 and 2 of the Sherman Act.¹⁷⁸ It stated that the basic concerns relevant to both sections are the same, but “a monopolist’s use of exclusive contracts, in certain circumstances, may give rise to a [Section] 2 violation even though the contracts foreclose less than the roughly 40% or 50% share usually required in order to establish a [Section] 1 violation.”¹⁷⁹ Microsoft’s exclusive dealing agreements prevented manufacturers from installing rival browsers to Internet Explorer, thereby protecting Microsoft’s monopoly.¹⁸⁰ In its defense, Microsoft argued that the restrictions did not completely block its competitor, Netscape, from distributing its browser.¹⁸¹ The D.C. Circuit found this claim insufficient to shield it from Section 2 liability because “although Microsoft did not bar its rivals from all means of distribution, it did bar them from the cost-efficient ones.”¹⁸²

Because Google’s exclusive dealing arrangements are similar to those in *Microsoft*, the D.C. Circuit’s rationale should provide a framework for analysis in a potential case against Google. Under Google’s RSAs, manufacturers agree to pre-install Google Search as the default search engine on all of their devices in exchange for large payments.¹⁸³ Just as Microsoft had set Internet Explorer as the default browser, Google has set Google Search as the default search engine via its RSAs. Even if Google provides enough evidence to support a defense that its exclusive arrangements do not block rival search engine providers from *all* channels of distribution, following the precedent in *Microsoft*, Google may still violate Section 2.

174. See *United States v. Microsoft Corp.*, 253 F.3d 34, 46 (D.C. Cir. 2001).

175. See *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30, 51–54 (D.D.C. 2000), *aff’d in part, rev’d in part*, 253 F.3d 34 (D.C. Cir. 2001).

176. See *id.* at 53.

177. See *Microsoft Corp.*, 253 F.3d at 46.

178. See *id.* at 70.

179. *Id.*

180. *Id.* at 61.

181. *Id.* at 64.

182. *Id.*

183. See FAIRSEARCH, *supra* note 150, at 35.

Google makes enormous profits by having a significant data scale advantage over its competitors in the internet search market, and the more data it is able to collect from search queries, the more data it can use to sell targeted advertising. Through its exclusivity payments, Google ensures access to user data obtained through internet searches on Android devices. Therefore, even if Google proves that it does not bar its rivals from *all* means of distribution, it at the very least bars them from the cost-efficient ones. This effectively limits competitors' ability to reach the market in the face of Google's exclusive dealing arrangements and allows it to maintain its monopoly in violation of Section 2 of the Sherman Act.

IV. OBSTRUCTION OF COMPETING ANDROID OPERATING SYSTEMS

Google promotes Android as an open-source operating system.¹⁸⁴ Open-source operating systems allow anyone to use and customize the software, whereas closed-source operating systems do not.¹⁸⁵ An example of a closed-source operating system is Apple's iOS, the use of which allows Apple to control every aspect of its devices.¹⁸⁶ A software platform is a two-sided market, meaning revenues can be realized on the manufacturer's side (as buyers), or on the side of the app developers (as sellers).¹⁸⁷ Google does not charge manufacturers to install Google's version of Android or its apps,¹⁸⁸ but it does charge app developers and in-app advertisers for bringing their offerings to market through Google Play.¹⁸⁹ Google's business model illustrates how the open-source nature of Android and its free provision of Google apps were crucial factors leading to Google's dominance in the markets for Android operating systems and Android-compatible app stores.¹⁹⁰

Alternative modes of Android OS can be created by anyone because Android is open-source. An individual can make changes to Google's version of Android OS by downloading the code to use as a base to expand on it. The Android Open Source Project website contains all of the information and source code needed to do so.¹⁹¹ When someone takes existing code and creates an

184. See *Opportunity. Powered by Choice*, ANDROID <https://www.android.com/everyone/enabling-opportunity/> (last visited Mar. 20, 2020).

185. Amir Efrati, *Google's Confidential Android Contracts Show Rising Requirements*, INFO. (Sept. 26, 2014, 7:25 AM), <https://www.theinformation.com/articles/Google-s-Confidential-Android-Contracts-Show-Rising-Requirements>.

186. See Tim Worstall, *The Problem with Apple's Closed Apps Universe*, FORBES (Aug. 31, 2012, 12:44 PM), <https://www.forbes.com/sites/timworstall/2012/08/31/the-problem-with-apples-closed-apps-universe/#c16effb794ba>.

187. Etro & Caffarra, *supra* note 137, at 285.

188. *Id.*

189. *Id.*

190. *Id.* at 286.

191. See *About the Android Open Source Project*, ANDROID <https://source.android.com/> (last visited Mar. 20, 2020).

independent project based on it, a “fork” is created.¹⁹² Google protects its dominant position by closing and controlling its Android OS through its Android Compatibility Program and AFAs, which prevent manufacturers from using these alternative Android OS forks.¹⁹³

Google’s Android Compatibility Program contains a set of technical requirements that manufacturers are required to comply with before their devices can be branded as “Android” devices.¹⁹⁴ Until recently, device manufacturers could choose from a variety of Android operating systems and a variety of open-source alternatives to Google’s version of Android OS. Now, manufacturers must certify that their devices follow Google’s strict regulations before they are permitted to license core Android apps and use the “Android” trademark; without these, their devices are unlikely to establish commercial traction.¹⁹⁵ One of the key provisions in Google’s MADA, which grants manufacturers the license to pre-install and distribute Google apps, explicitly prohibits manufacturers from endorsing forked versions of Android OS:

Company shall not, and shall not allow any third party to . . . take any actions that may cause or result in the fragmentation of Android, including but not limited to the distribution by Company of a software development kit (SDK) derived from Android.¹⁹⁶

Access to Google’s apps and use of the mark “Android” is critical for manufacturers’ devices to be competitive in the marketplace. Manufacturers are thereby forcibly compelled to accept Google’s terms, including the prohibition against promoting the fragmentation of Android OS.

Another contractual requirement that Google has imposed since the very first day Android launched in 2008 is the AFA.¹⁹⁷ AFAs apply additional terms that explicitly limit the ability of device manufacturers to distribute independent devices that rely on forks of Android OS by forcing them to use only Google’s version of Android.¹⁹⁸ By controlling Android OS in these ways, Google not only retains command of determining which apps are provided on Android devices, but also substantially limits the forks, or modes, in which Android runs.¹⁹⁹

Google’s prohibition against forking is anticompetitive conduct that likely violates Section 2 of the Sherman Act. A Section 2 violation is established when two elements are met: “(1) the possession of monopoly power in the relevant

192. See Jerry Hildenbrand, *What the Fork Is a “Fork?”*, ANDROIDCENTRAL (Apr. 6, 2013), <https://www.androidcentral.com/what-fork-fork>.

193. See FAIRSEARCH, *supra* note 150, at 35.

194. See *Android Compatibility Program Overview*, ANDROID <https://source.android.com/compatibility/overview> (last visited Mar. 20, 2020).

195. See FAIRSEARCH, *supra* note 150, at 35.

196. Exhibit B to Class Action Complaint, *supra* note 68, at 3.

197. See Mark MacCarthy, *Open Source Mobile Operating Systems Need to Control Fragmentation*, CIO (July 12, 2018, 8:30 AM), <https://www.cio.com/article/3289504/open-source-mobile-operating-systems-need-to-control-fragmentation.html>.

198. See *id.*

199. See FAIRSEARCH, *supra* note 150, at 35.

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.”²⁰⁰

A. MONOPOLY POWER IN THE MOBILE DEVICE OPERATING SYSTEM MARKET

As previously noted, the first step in proving a Section 2 claim is to provide evidence of monopoly power in the relevant market.²⁰¹ For the purposes of this analysis, the product market is the mobile device operating system market, and the geographic market is nationwide or worldwide because operating systems are high-technology products.²⁰² To determine whether a firm has monopoly power in a market, courts consider circumstantial evidence of the firm’s ability to control prices or exclude competition, and a significant indicator is market share.²⁰³ A market share in excess of 70% generally establishes a prima facie case of monopoly power in the United States, and a market share between 50–75% has been sufficient in establishing a Section 2 claim in a complaint.²⁰⁴ Android is used by 2 billion people around the world.²⁰⁵ Its market share in the mobile device operating system market worldwide is between 76.24% and 85.9%.²⁰⁶ These statistics demonstrate that Android is clearly the most popular operating system in the world, and support a prima facie finding of monopoly power.

B. MONOPOLY MAINTENANCE THROUGH EXCLUSIONARY CONDUCT

As mentioned, the possession of monopoly power alone does not violate Section 2 of the Sherman Act.²⁰⁷ A business with monopoly power must illegally enhance or maintain its monopoly through deliberate anticompetitive, or exclusionary, conduct.²⁰⁸ Courts agree that not all aggressive business conduct should be considered exclusionary, but have declined to define any bright line rules because of the difficulty in distinguishing between procompetitive conduct and anticompetitive conduct. This analysis is challenging because both types of conduct can have the apparent effect of forcing competitors out of the market.²⁰⁹ However, a few factors have often appeared in courts’ analyses of whether

200. *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966); *see also supra* notes 136, 140 and accompanying text.

201. *See supra* notes 136, 140 and accompanying text.

202. *See generally* *United States v. AT&T Inc.*, 310 F. Supp. 3d 161, 197 (D.D.C. 2018) (discussing how technology products should be assessed by the total measure of nationwide economic harm).

203. *See A.B.A.*, *supra* note 39, at 231.

204. *See supra* notes 88–89 and accompanying text.

205. Vlad Savov, *Android’s Trust Problem Isn’t Getting Better*, VERGE (Apr. 13, 2018, 9:12 AM), <https://www.theverge.com/2018/4/13/17233122/android-software-patch-trust-problem>.

206. *See supra* notes 93, 95 and accompanying text.

207. *See A.B.A.*, *supra* note 39, at 240; *see also supra* notes 32–36 and accompanying text.

208. *See Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP.*, 540 U.S. 398, 407 (2004) (“[T]he possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct.”).

209. *See A.B.A.*, *supra* note 39, at 242.

conduct is exclusionary, including: (1) the defendant's intent, (2) the defendant's justification for its conduct, and (3) the effect of the conduct and the sufficiency of the evidence that the defendant has caused, or is likely to cause, monopoly power to be acquired, enhanced, or maintained.²¹⁰

1. Intent

The first factor, the defendant's intent, is relevant to the exclusionary conduct analysis to the extent that it helps the court understand the likely effect of the monopolist's conduct.²¹¹ General intent to defeat competitors and obtain monopoly status in a market is not sufficient, standing alone, to violate antitrust law, because the goal of every business is to win the competitive battle.²¹² Rather, intent may be relevant if the purpose of the firm's conduct was to exclude rivals on a basis other than efficiency.²¹³

Google's course of conduct demonstrates Google's realization that Android forks could be a threat to its dominance if product distributors were able to successfully sell devices that do not include Google's apps in the United States. For example, in China, many of Google's services are blocked, so Android forks are popular among consumers.²¹⁴ This threat is Google's underlying concern and motivation in requiring manufacturers to sign AFAs. Through these agreements, Google is attempting to inhibit new devices from excluding Google's apps and Google's version of Android OS. In addition, Google has recently limited access to updated versions of its apps to only those manufacturers that sign AFAs, making Android forks less attractive to consumers in the United States, where Google's services are not blocked.²¹⁵ As a result, manufacturers are forced to sign restrictive AFAs with Google or build smartphones without the latest Android technology and services.

It is likely that Google's purpose in creating the AFAs was to use its popularity with consumers in the United States as leverage to exclude competition. Google Play, which delivers over 95% of apps downloaded to Android smartphones,²¹⁶ is clearly an all-important feature for device manufacturers to include with their products. Google is aware that Google Play and various other Google apps are 'must haves' for Android smartphones, and consequently has used this dominance to influence manufacturers. In order for their products to be branded as "Android" devices and to include these essential Google apps, manufacturers have no choice but to agree not to use or promote Android forks in the devices they sell to consumers. It is unlikely that Google's

210. *See id.* at 243–45.

211. *United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001).

212. *See Ocean State Physicians Health Plan v. Blue Cross & Blue Shield*, 883 F.2d 1101, 1113 (1st Cir. 1989) (“[D]esire to crush a competitor, standing alone, is insufficient to make out a violation of the antitrust laws.”); *see also A.B.A.*, *supra* note 39, at 244.

213. *See Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 605 (1985).

214. *See Efrati*, *supra* note 27.

215. *See id.*

216. *See Sayer*, *supra* note 92.

intent in generating this result was to increase the efficiency of its version of Android OS. If its intent was efficiency, it would not use its popular apps as leverage over device manufacturers. Rather, Google's AFAs propagate its intent: to allow Google to maintain its monopoly by obstructing the development and distribution of competitors' versions of Android OS.

2. *Justifications Do Not Outweigh Harm*

The second factor, the defendant's justification for its conduct, is weighed based on multiple considerations such as the legitimacy and significance of the defendant's proffered business justification, its relation to the conduct at issue, and the availability of less restrictive alternatives that can achieve the same result.²¹⁷ In addition, the conduct cannot be more restrictive than reasonably necessary for competition on the merits.²¹⁸

According to Google's Android Open Source Project website, "[a]s an open source project, Android's goal is to avoid any central point of failure in which one industry player can restrict or control the innovations of any other player."²¹⁹ However, open-source systems are vulnerable to development into rival versions—" [w]hen anyone can amend the source code, it is hard to maintain the unity and coherence of the program" because changes in the code may make "it incompatible with all other versions of the program."²²⁰ Google's position is that the restrictions placed on manufacturers through the AFAs are necessary to prevent fragmentation of the Android ecosystem.²²¹ Mobile platform fragmentation occurs when some users run older versions of an operating system, while other users actively run newer versions of the same operating system.²²² In November 2017, over half of all Android devices, approximately 1 billion, were more than two years out-of-date.²²³ If Android's fragmentation continues, Google maintains that the benefits of open-source programs to consumers, such as security, consistent user experience, and functionality, would dissipate because of the lack of a cohesive Android platform.²²⁴

Although Google's concerns are valid, its cited issues do not outweigh the harm that is created by requiring manufacturers to sign the AFAs. Google's prohibition on the development of Android forks results in the inability of

217. *See id.*

218. *See* United States v. AMR Corp., 140 F. Supp. 2d 1141, 1193 (D. Kan. 2001) (citing Instructional Sys. Dev. Corp. v. Aetna Cas. & Sur. Co., 817 F.2d 639, 649 (10th Cir. 1987)).

219. *See About the Android Open Source Project*, *supra* note 191.

220. MacCarthy, *supra* note 197.

221. *See* European Comm'n, *supra* note 157.

222. *See* Rayna Hollander, *Android Fragmentation Is Worsening*, BUS. INSIDER (Nov. 15, 2017, 6:54 AM), <https://www.businessinsider.com/android-fragmentation-is-worsening-2017-11>.

223. *See id.*

224. *See* MacCarthy, *supra* note 197; *see also* Simon Hill, *What Is Android Fragmentation, and Can Google Ever Fix It?*, DIGITAL TRENDS (Oct. 31, 2018, 7:35 AM), <https://www.digitaltrends.com/mobile/what-is-android-fragmentation-and-can-google-ever-fix-it/>.

manufacturers to develop and distribute alternative versions of Android and alternative apps, thereby inhibiting creativity and innovation. Intentionally preventing compatibility between apps and platforms in such a manner has been found to violate Section 2 of the Sherman Act.

In *Microsoft*, the D.C. Circuit held Microsoft liable under Section 2 for deceiving Java app developers into generating apps that were dependent on Windows OS and incompatible with other operating systems.²²⁵ Microsoft's goal in doing so was to prevent cross-platform uses of Java, thereby protecting Windows' monopoly in the operating system market.²²⁶ Microsoft engaged in illegal monopoly maintenance by restricting the development of apps and minimizing competitors' influence in the market.²²⁷ By preventing the distribution and usefulness of Android forks, Google's AFAs have a similar effect on the mobile device operating system market.

Additionally, Microsoft was held liable for another Section 2 violation for entering into First Wave Agreements (FWAs) with manufacturers to use only Microsoft's Java Virtual Machine (JVM) program.²²⁸ Under these FWAs, manufacturers agreed to make their Java apps reliant on Windows-specific technology and to refrain from distributing JVM programs that were compatible with the technology of Microsoft's competitors.²²⁹ This anticompetitive conduct that Microsoft engaged in parallels Google's current conduct. Google justifies its restraint on creativity by maintaining that the AFAs and Google's new app restrictions protect Android OS from fragmentation.²³⁰ This reasoning parallels one of Microsoft's defenses of its FWA contracts. Microsoft claimed that the FWAs were a practical solution to ensuring uniformity and efficiency in order to benefit consumers.²³¹ Google claims that its actions benefit consumers by ensuring that apps run seamlessly across all devices using the Android OS.²³² However, the D.C. Circuit in *Microsoft* rejected this claim and held that the FWAs significantly precluded the development and distribution of alternative versions of the JVM program, thus illegally protecting Microsoft's monopoly from threats of competition.²³³ Along similar lines, Google's stifling of competition and diminishing of incentives to innovate result in far greater harm to consumers than any legitimate, procompetitive benefits that may arise.

There are less-restrictive alternatives to AFAs that Google can adopt to combat fragmentation of Android OS. Preventing the emergence of Android forks is not necessary for Google to ensure that devices using its version of

225. See *United States v. Microsoft Corp.*, 253 F.3d 34, 76–77 (D.C. Cir. 2001).

226. See *id.*

227. See *id.* at 77–78.

228. See *id.* at 75–76.

229. See *id.*

230. See *Device Compatibility Overview*, ANDROID <https://developer.android.com/guide/practices/compatibility> (last visited Mar. 20, 2020).

231. See *Microsoft*, 253 F.3d at 75.

232. See *Device Compatibility Overview*, *supra* note 230.

233. See *Microsoft Corp.*, 253 F.3d at 75–76.

Android are compliant with its technical requirements.²³⁴ Google can implement updated procedures for its apps and version of Android OS to ensure reliability without tightening its grip on Android and using compatibility as leverage to get manufacturers to do what they want. It is also important to note that Google has not had much pressure to arrive at a solution to fragmentation because “Android isn’t, by any means, losing steam, and users haven’t exactly grabbed pitchforks and showed up to Mountain View demanding change.”²³⁵

3. *Enhancement and Maintenance of Monopoly Power*

The third factor that has appeared frequently in courts’ analyses of whether conduct is exclusionary is the sufficiency of evidence showing that the conduct has, or is likely to, cause monopoly power to be acquired, enhanced, or maintained.²³⁶ In *Microsoft*, the D.C. Circuit held that causation may be inferred when “exclusionary conduct is aimed at producers of nascent competitive technologies as well as when it is aimed at producers of established substitutes.”²³⁷ The court realized that it would be unreasonable to require Section 2 liability to turn on a plaintiff’s inability to reconstruct the hypothetical marketplace that would have existed without the defendant’s anticompetitive conduct.²³⁸

Given this issue, the D.C. Circuit’s test for causation was not whether the competing products would actually have developed into viable substitutes for Microsoft’s dominant product.²³⁹ Instead, the court’s analysis focused on (1) whether “the exclusion of nascent threats [was] the type of conduct that [was] reasonably capable of contributing significantly” to Microsoft’s continued monopoly power, and (2) whether the competing products “reasonably constituted nascent threats at the time Microsoft engaged in the anticompetitive conduct at issue.”²⁴⁰ Under this framework, the D.C. Circuit held that (1) the entire purpose of the Sherman Act is to prevent monopolists from having free reign to destroy nascent competitors at will, particularly in a fast-paced technology industry, and (2) the District Court made sufficient findings showing that Microsoft’s competitors had potential to threaten Microsoft’s dominant product in the marketplace.²⁴¹

In applying the *Microsoft* framework in a case against Google, it is necessary to show that at the time Google obstructed the development and distribution of alternative versions of Android OS, competitors had the potential to threaten Google’s dominance. If Google did not prohibit Android forks,

234. See European Comm’n, *supra* note 157.

235. Rithvik Rao, *What Is Android Fragmentation, and Can Google Fix It?*, ANDROID AUTHORITY (Sept. 5, 2016), <https://www.androidauthority.com/android-fragmentation-google-fix-it-713210/>.

236. See A.B.A., *supra* note 39, at 244.

237. *Microsoft Corp.*, 253 F.3d at 79.

238. *Id.*

239. *Id.*

240. *Id.*

241. *Id.*

Amazon's Fire OS, a version of Android, could have been a rival. Shortly after its launch in 2014, Amazon was forced to take a \$170 million write-down charge on costs related to Fire OS while still having \$83 million worth of devices in its inventory.²⁴² Fire OS devices did not offer Google Play, use the "Android" trademark, or come pre-installed with any of Google's proprietary apps.²⁴³ They used Amazon's app store, which has about 240,000 apps, a paltry amount compared to the over 1 million apps on the Google Play store in 2014.²⁴⁴ Because Fire OS devices did not come pre-installed with popular services provided by Google's proprietary apps, consumers were deterred by the fact that access to Google's services was cumbersome.²⁴⁵ It is also important to note that as part of its validation in fining Google €4.34 billion for antitrust violations in July 2018, the Commission said that it "found evidence that Google's conduct prevented a number of large manufacturers from developing and selling devices based on Amazon's Android fork called 'Fire OS.'"²⁴⁶ Fire OS could have been a potential threat to Google's dominance in the mobile device operating system market in the United States as an alternative Android OS platform and could have provided a platform for rival search engines and apps to gain more traffic.²⁴⁷ The failure of potential rivals like Fire OS in the mobile device operating system market is evidence that Google's prohibitions on forking have helped it maintain its monopoly power.

Google's conduct has allowed it to maintain its monopoly power, and this conduct is likely to continue to enhance its power. Consumers will continue to suffer from fewer and fewer choices and stagnant product development. Additionally, if Google succeeds in totally eliminating the competition in the mobile device operating system market, it will have the complete freedom to charge higher prices for its version of Android OS.

In the past, Google has abruptly imposed a price on a marketing platform product it had once offered for free—Google Analytics ("Analytics"). When Google introduced Analytics in 2005, there was healthy competition and innovation in the market for web analytics.²⁴⁸ All of Analytics' features were given to users for free, and what had once been a flourishing market quickly became the opposite.²⁴⁹ Once its rivals had been forced out of the market, Google suddenly hiked its price and began charging "premium" users who

242. See Victor Luckerson, *4 Reasons Amazon's Fire Phone Was a Flop*, TIME (Oct. 24, 2014), <http://time.com/3536969/amazon-fire-phone-bust/>.

243. See *id.*

244. *Id.* As of March 20, 2020, there are 2,868,939 Android apps on Google Play, according to AppBrain. See *Number of Android Apps on Google Play*, APPBRAIN, <https://www.appbrain.com/stats/number-of-android-apps> (last visited Mar. 20, 2020).

245. See Luckerson, *supra* note 242.

246. European Comm'n, *supra* note 157.

247. See Barker & Khan, *supra* note 108.

248. See *Google Analytics Is 10 Year Old—What's Changed?*, BRIAN CLIFTON, <https://brianclyfton.com/blog/2015/11/10/google-analytics-is-10-what-has-changed/> (last visited Mar. 20, 2020).

249. *Id.*

wanted advanced features a \$150,000 annual fee for a product that gained dominance because it had been offered for free.²⁵⁰

If Google is allowed to continue its prohibition on Android forks, competition in the mobile device operating system market will continue to dissolve and it will gain an even greater monopoly. With no competitive forces to pressure Google, Google will have the freedom to charge users for Android, just as it did with Analytics. For the aforementioned reasons, and in conformity with the *Microsoft* decision, Google has likely violated Section 2 of the Sherman Act by obstructing the development and distribution of Android forks.

CONCLUSION

The purpose of the Sherman Act is to promote competition, consumer welfare, and innovation. Consumers are deprived of meaningful options as Google starves potential competitors of the opportunities and resources to create and provide viable options for society. Google should be required to end the tying of Google Search and Google Chrome to Google Play and its version of Android OS, withdraw its contracts with manufacturers that make payments conditional on exclusive pre-installation of Google Search, and cease restrictive practices that prevent manufacturers from selling devices that run on alternative versions of Android OS. These steps are necessary to restore competition vital to the digital economy.

250. See generally Iris Hearn, *Is Google Analytics Free?*, IMPACT (July 11, 2017), <https://www.impactbnd.com/blog/is-google-analytics-free>.