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ARE COMPETITION AUTHORITIES EQUIPPED TO COMBAT ENTRENCHED DIGITAL MONOPOLIES? - LESSONS FROM THE US AND EU ANTITRUST CASES AGAINST GOOGLE

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Jasper van den Boom**

This article compares the approach to antitrust remedies in digital markets in two jurisdictions, the EU and the US. Our study is based on the cases against Google, with a particular focus on the problems faced by the European Commission in finding suitable remedies in Google Shopping and Google Android. Our analysis of remedies in the US emphasizes their comparative breadth and distinct purpose, restoring lost competition. We compare the design and objectives of EU and US laws and explain how these differences impact the abilities of the European Commission and US courts to formulate proper remedies. We find that the European Commission—despite its intensive investigation into the facts—is held back in its ability to impose suitable remedies as a consequence of the design of EU laws, as well as the procedures followed in competition law cases. The procedures under the US Sherman Act grant significantly more discretion to the Department of Justice and courts to find proper remedies. We conclude that despite challenges in both jurisdictions, EU and US competition authorities can work symbiotically if the US acts as a second-mover, using lessons from European enforcement to develop suitable remedies. The effectiveness of remedies does, however, hinge on political will to impose them. In contrast, we find that

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Conflicts of interest: Professor Scott Morton is retained as an economic expert for a UK class of advertisers against Google. She regularly consults for government plaintiffs in matters that remain confidential.

on the EU side, it will be necessary to amend the relevant laws and procedures to make remedies more effective, despite the Commission intending to proactively enforce EU competition law.

1. INTRODUCTION

What is needed to restore competition in digital markets? The Department of Justice's recent win against Google is a landmark victory for US antitrust authorities.¹ However, it does not follow from a finding that there was a violation of Section 2 of the Sherman Act that competition will be easily restored.² This is demonstrated by past enforcement activities in the European Union.³ The objective of this article is to explore why remedies following past enforcement activities in the EU have failed to restore competition, in order to draw lessons for the ongoing remedy debate in the United States and other jurisdictions in the future.

The European Commission is the focal point of our study as it has been the leading authority in enforcing antitrust laws against Google.⁴ To date, there have been four investigations into Google products under Art. 102 of the Treaty on the Functioning of the European Union (TFEU): *Google Shopping*, *Google Android*, *Google AdSense*, and *Google AdTech*.⁵ Three investigations have been concluded, and the Commission has imposed remedies that found support in the European Courts on Google Shopping and Google Android.⁶

The Commission's first infringement decision against Google, its Google Shopping decision, was published in 2017.⁷ The second, Google Android, was published in 2018.⁸ The Court of Justice of the European Union, the highest

1. *Department of Justice Prevails in Landmark Antitrust Case Against Google*, DEP'T JUST. (Apr. 17, 2025), <https://www.justice.gov/opa/pr/department-justice-prevails-landmark-antitrust-case-against-google> [https://perma.cc/K7MX-WK6X].

2. *See id.* (inferring that liability under § 2 does not automatically ensure effective restoration of competition)

3. Pablo Ibáñez Colomo, *Remedies in EU Antitrust Law*, 21 J. COMPETITION L. & ECON. PRAC. 137, 142 (2025), <https://doi.org/10.1093/joclec/nhae022> [https://perma.cc/S42M-GQYQ].

4. European Commission Press Release IP/17/1784, *Antitrust: Commission fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service* (June 27, 2017) [https://perma.cc/7Z9W-7FJ4].

5. *Google Search (Shopping)*, EUR. COMM'N, <https://competition-cases.ec.europa.eu/cases/AT.39740> [https://perma.cc/G3KF-PQSZ] (last visited Oct. 5, 2025); *Google Android*, EUR. COMM'N, <https://competition-cases.ec.europa.eu/cases/AT.40099> [https://perma.cc/F8DB-FTRQ] (last visited Oct. 5, 2025); *Google Search (AdSense)*, EUR. COMM'N, <https://competition-cases.ec.europa.eu/cases/AT.40411> [https://perma.cc/P8MW-2UBF] (last visited Oct. 5, 2025). *See also Google—Adtech and Data-related Practices*, EUR. COMM'N, <https://competition-cases.ec.europa.eu/cases/AT.40670> [https://perma.cc/C7ML-Z8RE] (last visited Oct. 5, 2025) (documenting the EU starting formal antitrust proceedings against Google and Alphabet).

6. Commission Decision Case AT.39740 (EC) https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf [https://perma.cc/W26B-E5CH]; Commission Decision Case AT.40099 (EC), https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf [https://perma.cc/AP2G-LTXG].

7. Commission Decision Case AT.39740 (EC) https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf [https://perma.cc/W26B-E5CH]

8. Commission Decision Case AT.40099 (EC), https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf [https://perma.cc/AP2G-LTXG].

court of appeal, ruled in favor of the Commission on the first case, *Google Shopping*, in September 2024.⁹ *Google Android* has been affirmed by the General Court in 2022, but is still under appeal at the highest court.¹⁰ These two cases are the focus of the analysis in this article. *Google AdSense*, initiated in 2019, initially led to a finding of infringement by the Commission, but has been overturned by the General Court on substance.¹¹ Investigations into Google AdTech, started in 2021, have not yet concluded.¹² As this article focuses on remedies, these two cases remain outside the scope.

In the US, enforcement efforts have picked up steam.¹³ The win by several U.S. states and the U.S. Department of Justice in August 2024 in district court in their own Google Search case further advanced competition enforcement in this industry, creating new opportunities for effective interventions in this market.¹⁴ In 2025, the U.S. District Court for the Eastern District of Virginia found Google liable for monopolization in open web digital advertising markets.¹⁵ With these two significant findings of liability, it is pressing to identify the range of remedies available to mitigate the harms and to identify how the interests of different parties must be balanced.¹⁶

This paper uses the EU as a case study to identify why remedies may fall short to provide instructions on how to balance effectiveness and proportionality in cases going forward. We find that the remedies in the EU were insufficient to restore competition, and attribute this—at least in part—to the design of the cases themselves, as well as the legal space offered to the Commission to develop remedies in EU competition law.

We also find that these issues are less apparent in the US antitrust system. While the US DOJ case against Google is not ideal in terms of substance either, US antitrust laws offer courts more discretion to impose effective remedies, and the delineation of the initial case imposes fewer restrictions on remedies.¹⁷ We find that US antitrust law, unlike EU competition law, does offer

9. Case C-48/22 P, *Google & Alphabet v. Comm'n (Google Shopping)*, ECLI:EU:C:2024:726, ¶ 271 (Sept. 10, 2024).

10. Case T-604/18, *Google & Alphabet v. Comm'n (Google Android)*, ECLI:EU:T:2022:541, ¶¶ 267, 619, 894 (Sept. 14, 2022).

11. Case T-334/19, *Google & Alphabet Inc. v. Eur. Comm'n (Google AdSense for Search)*, ECLI:EU:T:2024:634, ¶ 1005 (Sept. 18, 2024).

12. European Commission Press Release IP/23/3207, *Antitrust: Commission sends Statement of Objections to Google over abusive practices in online advertising technology* (June 14, 2023), https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3207 [<https://perma.cc/637S-T5LF>].

13. *Biden Administration Steps Up Antitrust Enforcement*, AMER. BAR ASS'N, <https://www.americanbar.org/news/abanews/aba-news-archives/2021/11/antitrust-enforcement/> [<https://perma.cc/5QW7-AW8Y>] (last visited Sept. 23, 2025). See DEP'T JUST., *supra* note 1 (quoting Attorney General Pamela Bondi that the Department of Justice will continue taking bold legal action).

14. *Department of Justice Wins Significant Remedies Against Google*, DEP'T JUST., (Sept. 2, 2025), <https://www.justice.gov/opa/pr/departments-justice-wins-significant-remedies-against-google> [<https://perma.cc/W9FT-E4JF>].

15. DEP'T JUST., *supra* note 1.

16. DEP'T JUST., *supra* note 14.

17. Jasper van den Boom, *Towards effective remedies in EU competition law: Recalibrating Reg. 1/2003 to match digital market realities*, SHAPING COMPETITION IN THE DIGITAL AGE (SCIDA)

the necessary space to introduce effective remedies.¹⁸ However, whether such remedies will be imposed depends on the (political) will of courts to impose sufficiently far-reaching and mutually reinforcing remedies.¹⁹

Courts in the US can learn from the past efforts of the European Commission to find suitable remedies in its Google cases. The investigations by the European Commission provide not only valuable insights into how to assess antitrust cases against digital firms substantively, but the efforts of the Commission to impose remedies following these early cases help to determine a baseline for the gravity of the necessary interventions.²⁰ It has become clear that digital firms cannot be granted too much space in co-developing the remedies that apply to them, and that the risk of under-enforcement is high.²¹ The analysis in this article leads to the conclusion that EU competition law does not provide the Commission with sufficient discretion to impose effective remedies due to contemporary interpretations of the concept of proportionality and the high bar to impose structural remedies. As US antitrust law does provide space for such remedies, US antitrust authorities and courts can enjoy a second-mover advantage that the EU is incapable of.²² While such a second-mover advantage exists in theory, it can only be capitalized on if courts are willing to take the steps necessary to restore competition, but that is not evident in light of the economic and political power held by big tech firms.²³

The Article is structured as follows: Part 1 provides a brief discussion of the differences between the two jurisdictions in the goals of antitrust, followed by the basics of the remedies a regulator applies after an antitrust violation is established. Part 2 of this Article explains how the EU and the US Google Search cases differ from each other. Part 3 details the EU remedies, the legal constraints under which they are designed, and why they failed. Part 4 describes possible US remedies considering the courts' findings. Lastly, Part 5 concludes with lessons from the European experience that US courts and regulators may find useful in designing either remedies or regulation.

(Mar. 26, 2025), <https://scidaproject.com/2025/03/26/towards-effective-remedies-in-eu-competition-law-re-calibrating-reg-1-2003-to-match-digital-market-realities/> [<https://perma.cc/33FB-X5MM>].

18. See *id.* (contrasting U.S. and EU remedial systems).

19. *Id.*

20. See Colomo, *supra* note 3, at 160–61 (analyzing EU Commission remedies and lessons for other jurisdictions).

21. See, e.g., Thomas Höppner, *Antitrust remedies in digital markets: lessons for enforcement authorities from non-compliance with EU Google decision*, HAUSFELD (Nov. 19, 2020), <https://www.hausfeld.com/en-us/what-we-think/competition-bulletin/antitrust-remedies-in-digital-markets-lessons-for-enforcement-authorities-from-non-compliance-with-eu-google-decisions> [<https://perma.cc/HUM9-9ZFD>] (stating that the Commission has failed to enforce imposed remedies); Daniel Mandrescu, *Designing (restorative) remedies for abuses of dominance by online platforms*, 13 J. ANTITRUST ENF'T, 353, 388 (2024) <https://doi.org/10.1093/jaenfo/jnae040> [<https://perma.cc/AUH8-MVNR>] (explaining that the implementation of effective remedies is very challenging).

22. Paul Friederiszick, *EU and US Antitrust Is Converging on Anti-Monopoly*, PROMARKET (June 18, 2025), <https://www.promarket.org/2025/06/18/eu-and-us-antitrust-is-converging-on-anti-monopoly> [<https://perma.cc/KW3U-UKUJ>].

23. See DEP'T JUST., *supra* note 1 (providing an example of enforcement when courts are willing to hold a trial).

1.1 *The objectives of competition enforcement in the US and the EU*

This section explores the objectives of EU and US antitrust law and the objectives pursued specifically with the imposition of remedies. We find that a look at the foundation of the respective competition regimes shows why it is more difficult for the European Commission to seek the restoration of lost competition than it is under US antitrust law.

A. *The European Union*

EU competition law is enforced against undertakings that harm undistorted competition in the single market.²⁴ Abuses of dominance and cartels distort competition and harm consumer welfare directly (through exploitative behavior) or indirectly (through exclusionary behavior).²⁵ An anticompetitive merger can likewise result in the risk of coordinated or uncoordinated anti-competitive behavior, which results in the exploitation of trading partners or the exclusion of remaining small rivals.²⁶ Articles 101 and 102 of the TFEU contain the statutory prohibitions of cartels and abuses of dominance.²⁷ The Commission details the limits of acceptable behavior through soft and secondary law.²⁸ Under Art. 102 of the TFEU, it is illegal for a firm to *abuse* its dominance.²⁹ Having market power, or being a monopolist, is not illegal in itself.³⁰

24. Treaty on the Functioning of the European Union arts. 101–102, June 7, 2007, 2008 O.J. (C 115) 47 [hereinafter TFEU].

25. See, e.g., RICHARD WHISH & DAVID BAILEY, *COMPETITION LAW* Chs. 1-5 (Oxford University Press, 11th ed. 2018) (identifying abuses to the market and their nature); Maria Coppola Tineo & Russell Pittman, *Abuse of Dominance Enforcement under Latin American Competition Laws*, DEP'T JUST. 3, (Feb. 2006), <https://www.justice.gov/atr/abuse-dominance-enforcement-under-latin-american-competition-laws> [<https://perma.cc/XN5T-2KWR>] (noting that over-enforcement is criticized as harming consumers); *Damages Claims for Abuse of Dominance: A German Perspective on Effective Private Enforcement*, HAUSFELD, (Aug. 2023), <https://www.hausfeld.com/what-we-think/competition-bulletin/damages-claims-for-abuse-of-dominance-a-german-perspective-on-effective-private-enforcement> [<https://perma.cc/KG57-GJJJ>] (predicting harm in abuse of dominance cases, and noting consumers are harmed in cartel cases).

26. 2004 O.J. (C 31) 7.

27. TFEU arts. 101–102.

28. 2011 O.J. (C11) 1; 2004 O.J. (C101) 97; Commission Regulation (EU) 330/2010 of 20 April 2010 on the Application of Article 101(3) of the Treaty on the Functioning of the European Union to Categories of Vertical Agreements and Concerted Practices, 2010 O.J. (L102) 1; 2010 O.J. (C130) 1.

29. TFEU art. 102.

30. 2011 O.J. (C11) 1, 10; See Commission Regulation 1/2003, art. 7, 2003 O.J. (L 1) 9 (EC)“Where the Commission, acting on a complaint or on its own initiative, finds that there is an infringement of Article 81 or of Article 82 of the Treaty, it may by decision require the undertakings and associations of undertakings concerned to *bring such infringement to an end*. For this purpose, it may impose on them any behavioral or structural remedies which are proportionate to the infringement committed and necessary to bring the infringement effectively to an end.”) (emphasis added); see also Colomo, *supra* note 3, at 140, note 19 (“Where the Commission, acting on a complaint or on its own initiative, finds that there is an infringement of Article 81 or of Article 82 of the Treaty, it may by decision require the undertakings and associations of undertakings concerned to bring such infringement to an end. For this purpose, it may impose on them any behavioral or structural remedies which are proportionate to the infringement committed and necessary to bring the infringement effectively to an end.”).

The Commission has detailed the application of the law in its 2009 guidelines on enforcement priorities in applying Art. 102 of the TFEU.³¹ It explains that the emphasis of the Commission's enforcement will be on exclusionary behavior as to safeguard the competitive process.³² The Commission

*will focus on those types of conduct that are most harmful to consumers. Consumers benefit from competition through lower prices, better quality and a wider choice of new or improved goods and services. The Commission, therefore, will direct its enforcement to ensuring that markets function properly and that consumers benefit from the efficiency and productivity which result from effective competition between undertakings.*³³

This means that while Art. 102 of the TFEU allows the Commission to pursue exploitative abuses of market power (e.g. excessive pricing), enforcement generally focuses on cases of exclusion (e.g. competitive foreclosure).³⁴

Currently, the objectives of EU competition law are understood to be threefold: (1) to protect the competitive process by preventing or resolving distortions of competition, that; (2) have a negative impact on consumer welfare (in particular in terms of price, choice, and quality); and (3) to protect the functioning of the internal market by resolving barriers to trade across Member States.³⁵ Theories about the goals of competition law argue that there are other objectives that are pursued through EU competition law implicitly or explicitly, ranging from fairness to sustainability, or other social goals.³⁶ However,

31. Commission Guidance on the Commission's Enforcement Priorities in Applying Article 102 of the Treaty on the Functioning of the European Union to Abusive Exclusionary Conduct by Dominant Undertakings, 2009 O.J. (C45) 7; Guidelines on exclusionary abuses of dominance, Eur. Comm'n, https://competition-policy.ec.europa.eu/public-consultations/2024-article-102-guidelines_en [<https://perma.cc/3LKW-VCLJ>] (last visited Sept. 24, 2025).

32. Legal Requirements European Commission, EE&MC, <https://www.ee-mc.com/expertise/dominance/-/abuse/legal-requirements-european-commission.html> [<https://perma.cc/L676-DMTB>] (last visited Sept. 24, 2025). The Commission Guidelines have a dual role and it is not always clear how they should be understood. The Commission presents the Guidelines as descriptive, simply detailing their practices and procedures. In practice however, the Guidelines are a way for the Commission to set the course for their policies and enforcement principles. See, e.g., Pablo Ibáñez Colomo, *The (Second) Modernisation of Article 102 TFEU: Reconciling Effective Enforcement, Legal Certainty and Meaningful Judicial Review*, 14 J. EUR. COMPETITION L. & PRACTICE 608, 620 (2023) (noting that in the context of Art. 102 TFEU in fact, the policy priorities outlined in the Guidance found their way into case law).

33. Commission Guidance 45/02 of Feb. 24, 2009, Guidance on the Commission's enforcement priorities in Applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, 2009 O.J. (C 45) 7, 7.

34. TFEU art. 102.

35. TFEU arts. 101–102; Commission Guidance 45/02 of Feb. 24, 2009, Guidance on the Commission's enforcement priorities in Applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings, 2009 O.J. (C 45) 7, 7.

36. Giuseppe Colangelo, *Fairness and Ambiguity in EU Competition Policy*, L. & ECONS. CTR. (Feb. 15, 2023), <https://laweconcenter.org/resources/fairness-and-ambiguity-in-eu-competition-policy/> [<https://perma.cc/8MYA-4NNF>]; *Competition Laws by Region*, ICAO <https://www.icao.int/competition-laws-region> [<https://perma.cc/TK7X-3H88>] (last visited Sept. 24, 2025); see Marios C. Iacovides & Konstantinos Stylianou, *The New Goals of EU Competition Law: Sustainability, Labour Rights, and Privacy*, 3 EUR. L. OPEN 587, 589 (2024), <https://doi.org/10.1017/elo.2024.31> [<https://perma.cc/52DF-U6HM>] (analyzing the recognition of sustainability, labor rights, and privacy as objectives in EU competition law).

these goals are not explicitly recognized in the guidelines and communications issued by the Commission and can only be inferred from studies of case law and academic literature.³⁷

The Commission is currently revising the key legal elements of EU competition law to recalibrate the objectives and priorities of competition law with contemporary challenges.³⁸ The revised Guidelines on the application of Art. 102 of the TFEU on exclusionary conduct are due to be published in 2025.³⁹ In the Draft Guidelines, released in 2024, the Commission states that the purpose of enforcement for *all* EU competition rules should be to promote effective competition, which results in competition on the merits as to drive market players to deliver the “*best products in terms of choice, quality and innovation, at the lowest prices*” for consumers.⁴⁰ It ensures that “*markets remain open and dynamic, creating new opportunities for innovative players including small and medium-sized enterprises (“SMEs”) and start-ups to operate on a level playing field with other players.*”⁴¹ It also “*spurs innovation and ensures an efficient allocation of resources*, thereby contributing to sustainable development and enabling *strong and diversified supply chains*, all of which contribute to the Union’s *resilience* and long-term prosperity.”⁴² These changes emphasize protecting the competitive process and restoring competition more explicitly.⁴³ It is not yet clear how the latter would affect the procedures related to remedy design.⁴⁴

37. Cf. Konstantinos Stylianou & Marios Iacovides, *The Goals of EU Competition Law: A Comprehensive Empirical Investigation*, 42 LEGAL STUD. 620, 622–23 (2022) (providing a comprehensive review of the goals attributed to EU law in legal scholarship).

38. Among these are Commission Communication, Commission Notice on the definition of the relevant market for the purposes of Union competition law, 2024 O.J. (C 2023/6789) European Commission Press Release IP/21/2588, State aid: Commission invites interested parties to provide comments on proposed revision of Guidelines on State aid to promote risk finance investments, (May 20, 2021); see also Report on Competition Policy 2023, EUR. UNION 3 (2024), <https://op.europa.eu/en/publication-detail/-/publication/53a4d34f-f3f6-11ef-b7db-01aa75ed71a1> [<https://perma.cc/NS8R-X6Y9>] (stating the EU is continuing to streamline procedures and rules); Commission Communication, Guidelines on the applicability of Article 101 of the Treaty on the Functioning of the European Union to horizontal co-operation agreements, 2023 O.J. (C 259) 1, 7 (replacing earlier guidelines).

39. *Commission seeks feedback on draft antitrust Guidelines on exclusionary abuses*, EUR. COMM’N (July 31, 2024), https://ec.europa.eu/commission/presscorner/detail/en/ip_24_3623 [<https://perma.cc/8UJB-7G5G>]; Baptist Vleeshouwers & Álvaro López de Ochoa García, *EU – European Commission publishes draft Guidelines on exclusionary abuse, requests feedback*, BIRD & BIRD (Sept. 18, 2024), <https://competitionlawinsights.twobirds.com/post/102jj7b/eu-european-commission-publishes-draft-guidelines-on-exclusionary-abuse-reques> [<https://perma.cc/J9LT-HUJJ>].

40. *Draft Guidelines on the Application of Article 102 of the Treaty on the Functioning of the European Union to Abusive Exclusionary Conduct by Dominant Undertakings*, EUR. COMM’N 3 (Aug. 1, 2024), (emphasis added) https://competition-policy.ec.europa.eu/public-consultations/2024-article-102-guidelines_en [<https://perma.cc/XV7A-4CAD>] (downloading the files under “Consultation Documents”) [hereinafter Draft Guidelines on Art. 102].

41. *The Digital Markets Act: Ensuring Fair and Open Digital Markets*, EUR. COMM’N, (emphasis added) https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/digital-markets-act-ensuring-fair-and-open-digital-markets_en [<https://perma.cc/A666-GCQT>] (last visited Sept. 24, 2025).

42. *Draft Guidelines on Art. 102*, *supra* note 40, at 3 (emphasis added).

43. *Draft Guidelines on Art. 102*, *supra* note 40.

44. See *id.* (focusing on addressing the harms while not delving into specific remedies).

The *enforcement* of EU competition law should create four distinct effects: deterrence, restoration, punishment, and compensation.⁴⁵ Compensation is a relatively recent purpose which is enabled by private enforcement, particularly in the form of claiming (follow-on) damages.⁴⁶ In the case of cartel violations, punishment occurs with fines.⁴⁷ EU enforcement tries to restore competition by ending the *behavior* that results in the anti-competitive effect.⁴⁸ This means that for dominant undertakings, which have engaged in anti-competitive forms of conduct, e.g. refusal to deal, tying and bundling, or self-preferencing, the Commission's enforcement activities serve to end that specific behavior, and, by implication, the associated effects.⁴⁹ Thus, unlike US antitrust law, EU competition law does not intend to end the monopoly or the monopolization of a market itself.⁵⁰ This difference limits the scope of the intervention and the desired restorative effect.⁵¹ This limitation is particularly critical in cases where there are network effects or data economies that cause a market to "tip" and the dominant firm to become entrenched.⁵²

EU competition law is governed by the belief that sufficiently rigorous competition law enforcement—paired with fines—will result in deterrence effects which should ultimately limit the distortions of competition that take place.⁵³ Below we explain why this is unlikely to be the case for a large digital platform.⁵⁴ If deterrence fails, the presence of dominant undertakings is dealt

45. Cedric Argenton, et al., *Can abuse of dominance be tackled more effectively?*, TILEC, TILBURG UNIV. 21 (May 15, 2023), <https://open.overheid.nl/documenten/8d07509f-602a-49b5-b0f3-974644563fb0/file> [<https://perma.cc/D6GE-9ZX7>].

46. *See id.* (explaining that compensation "is mainly obtained through the application of liability rules in private litigation").

47. TFEU arts. 101–102; *Fines*, EUR. COMM'N, https://competition-policy.ec.europa.eu/index/fines_en [<https://perma.cc/BAE5-M3MZ>] (last visited Sept. 24, 2025).

48. Jasper van den Boom & Rupperecht Podszun, *Procedures in the DMA: Non-Compliance Navigation—Exploring the European Commission's Space for Discretion and Informality in Procedure and Decision-Making in the Digital Markets Act*, EUR. COMP. J. Feb. 2025, at 6-7.

49. *See* Burton Ong & Ding Jun Toh, *Digital Dominance and Social Media Platforms: Are Competition Authorities Up to the Task?*, 54 INT'L R. INTELL. PROP. & COMPETITION L. 527, 530–32 (2023), <https://doi.org/10.1007/s40319-023-01302-1> [<https://perma.cc/48NN-3DQ7>] (providing examples of social media platforms targeted for their anti-competitive behaviors).

50. *Cf.* Whish & Bailey (2024), *supra* note 25 at 4 (Abuses may be 'exclusionary' or 'exploitative'...."); *See* Maria Coppola & Renato Nazzini, *The European and U.S. Approaches to Antitrust and Tech: Setting the Record Straight—A Reply to Gregory J. Werden & Luke M. Froeb's Antitrust and Tech: Europe and the United States Differ, and It Matters*, COMPETITION POL'Y INT'L (May 4, 2020), <https://www.pymnts.com/cpi-posts/the-european-and-u-s-approaches-to-antitrust-and-tech-setting-the-record-straight-a-reply-to-gregory-j-warden-and-luke-m-froeb-s-antitrust-and-tech-europe-and-the-united-states-differ/> [<https://perma.cc/8DHM-STX5>] (noting that "the key concepts are 'abuse' and 'dominant' position").

51. Mandrescu, *supra* note 21, at 355; Coppola & Nazzini, *supra* note 50.

52. *Cf.* Jacques Crémer et al., *Competition Policy for the Digital Era*, EUR. COMM'N 19-21 (2019), <https://op.europa.eu/en/publication-detail/-/publication/21dc175c-7b76-11e9-9f05-01aa75ed71a1/language-en> [<https://perma.cc/4MK8-SLG6>].

53. *See* Pablo Ibáñez Colomo, *Restrictions By Object Under Article 101 (1) TEFU: From Dark Art to Administrable Framework*, 43 YEARBOOK EUR. L. 224, 230-31 (2024) (visualizing competition schemes); Colomo, *supra* note 3, at 140 (explaining that remedies are meant to end the infringement) *Fines*, *supra* note 47 (explaining the fines for infringing Articles 101 and 102 of TFEU).

54. *See* Genevieve Lakier, *The Limits of Antimonopoly Law as a Solution to the Problems of the Platform Public Sphere*, KNIGHT FIRST AMEND. INST. (March 30, 2020), <http://knightcolumbia.org/content/the>

with through the abuse of dominance provision which, in theory, prevents the firm from exercising its market power.⁵⁵ This is very distinct from US antitrust law, where creating or maintaining the monopoly is the violation but there is no ability to control the exercise of lawful market power.⁵⁶

B. *The United States*

The history of the purpose of the antitrust laws in the US has been covered by many eminent scholars.⁵⁷ In particular, recent writings argue that because the Congress that passed the Sherman Act was concerned not only about competition but also about the size and political power of firms, that expanding current antitrust considerations should also be a goal of modern enforcement.⁵⁸ Today, U.S. courts focus on the enforcement of both the Sherman Act and the Clayton Act on the protection of competition and consumers.⁵⁹

Vigorous competition generates lower prices, higher quality, and more innovation than trading partners would achieve in a less competitive market.⁶⁰ Social surplus includes, and enforcement agencies are therefore concerned with, competition at all parts of the value chain, whether that involves prices to end consumers, or to inputs such as workers or farm products (i.e. monopsony power).⁶¹

In recent years, there has been some confusion about whether enforcers are concerned about harms other than higher prices or whether the laws cover those harms.⁶² US enforcers have always been alert to the harms caused by a reduction in competition that lowers innovation or quality.⁶³ We know from the macroeconomics literature that welfare is far larger than incremental effi-

limits-of-antimonopoly-as-a-solution-to-the-problems-of-the-platform-public-sphere [https://perma.cc/6DHG-GTWR] (arguing that strict enforcement of big tech companies will not change the behavior of other big tech companies).

55. TFEU arts. 101–102.

56. *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966).

57. William L. Letwin, *Congress and the Sherman Antitrust Law: 1887-1890*, 23 UNIV. CHI. L. REV. 221, 221 (1956); Robert H. Bork, *Legislative Intent and the Policy of the Sherman Act*, 9 J.L. & ECON. 7, 7 (1966); George J. Stigler, *The Origin of the Sherman Act*, 14 J. LEGAL STUD. 1, 1 (1985); Christopher Grandy, *Original Intent and the Sherman Antitrust Act: A Re-examination of the Consumer-Welfare Hypothesis*, 53 J. ECON. HIST. 359, 359 (1993); Robert H. Jerry, II & Donald E. Knebel, *Antitrust and Employer Restraints in Labor Markets*, 6 INDUS. REL. L.J. 173, 184–85.

58. Lina M. Khan, *Amazon's Antitrust Paradox*, 126 YALE L. J. 710, 740, 743 (2017); Eric Posner & Ioana Marinescu, *Why Has Antitrust Law Failed Workers?*, 105 CORNELL L. REV. 1343, 1364 (2020).

59. See generally Robert H. Bork, *Legislative Intent and the Policy of the Sherman Act*, 9 J. L. & ECON. 7, 7–10 (1966) (articulating the “consumer welfare” standard applied by modern U.S. courts).

60. Giorgio Federico, Fiona Scott Morton & Carl Shapiro, *Antitrust and Innovation: Welcoming and Protecting Disruption*, 20 INNOVATION POL’Y & ECON. 125, 125–27 (2020).

61. Robert H. Jerry, II & Donald E. Knebel, *Antitrust and Employer Restraints in Labor Markets*, 6 INDUS. REL. L. J. 173, 184 (1984) (stating that just because the Sherman Act does not specifically name a particular restraint, it does not preclude arguments that the particular restraint is illegal).

62. See Khan, *supra* note 58 at 740–44 (critiquing narrow price-centric enforcement instead of focusing on innovation and quality harms).

63. Federico et al., *supra* note 60, at 127–29 (discussing how antitrust enforcers account for innovation harms alongside price harms).

ciencies in producing existing products.⁶⁴ Therefore, the role that competition plays in stimulating innovation is critical and often features in enforcement today.⁶⁵ Likewise, both short and long run harms to competition are covered by the law.⁶⁶

There is no “exploitation” or “excessive pricing” element to US law, unlike in Europe.⁶⁷ In the US, a company does not violate the law by charging a monopoly price or even by being a monopolist, as long as that market power was achieved “on the merits.”⁶⁸ Instead, it is the process of harming competition in order to become a monopolist that is a violation of the Sherman Act.⁶⁹ The active nature of the violation that creates the monopoly matches the active nature of the solution that restores competition.⁷⁰

1.2 Remedy Basics

A. Remedies in the EU

The main objectives of remedies in EU competition law are (a) terminating the infringement, (b) preventing re-occurrence, and (c) restoring or re-establishing the state of competition.⁷¹ While the statute cited above is from the Treaty on the Functioning of the European Union (“TFEU”), the procedural rules for competition law investigations are laid down in Regulation 1/2003.⁷² This procedural rulebook is binding on the European Commission.⁷³ Unlike Guidelines and other soft law, which are binding on the Commission but can be amended and published by the Commission itself, this Regulation has been adopted through legislative procedure and can only be changed through adoption by the Council of the EU and Parliament.⁷⁴

Article 7 Reg. 1/2003 empowers the Commission to impose remedies that suffice to “bring the infringement to an end.”⁷⁵ This means that ending the infringement and preventing its repetition should be the first and main purpose of

64. Aghion P. & Howitt P., *Technical Progress in the Theory of Economic Growth*, in *ECONOMICS IN A CHANGING WORLD*, 101-122 (Jean-Paul Fitoussi ed., Palgrave Macmillan 1995).

65. Federico et al., *supra* note 60, at 127–29.

66. *See id.* (“The critical role of competition policy is thus to prevent today’s market leaders from using their market power to disable disruptive threats...”).

67. *See Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004) (holding monopoly pricing alone is not illegal and liability requires exclusionary conduct); Case C-177/16, *AKKA/LAA v. Latvijas Republika*, 2017 ECLI:EU:C:2017:706 (finding that “excessive licensing fees” by AKKA/LAA were possibly abusive).

68. *See Verizon Commc’ns, Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. at 407 (finding that liability requires the party to have engaged in exclusionary conduct).

69. *United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966) (distinguishing lawful monopoly from unlawful monopolization, which requires exclusionary conduct).

70. *See Federico et al.*, *supra* note 60, at 125 (describing the active nature of exclusionary conduct).

71. Mandrescu, *supra* note 21 at 356.

72. Council Regulation (EC) No. 1/2003, art. 7, 2003 O.J. (L 1) 9.

73. *Id.* arts. 5–7.

74. TFEU arts. 289, 294. *See id.* Recital 1 (designating it as legislation).

75. Council Regulation (EC) No. 1/2003, art. 7, 2003 O.J. (L 1) 9.

the chosen remedy.⁷⁶ Only in situations where cease-and-desist orders paired with behavioral restrictions are insufficient to end the infringement and prevent its re-occurrence, should the Commission see if the sources of market power need to be addressed through (for instance) structural separations.⁷⁷ The test to determine whether structural measures are needed is strict, and as a result the European Commission has never actually imposed a divestiture as a remedy in an Art. 102 case.⁷⁸ Structural measures are, however, a relatively common phenomenon in merger procedures.⁷⁹

While structural remedies are used in merger control and remedies, the design and interpretation of Regulation 1/2003, together with principles of EU law generally, severely limit their use when it comes to remedies *imposed*.⁸⁰ The principle of proportionality is of major significance in EU law: every act by the European institutions—and to a lesser extent by the Member States—must be proportional to the goals pursued to comply with EU law.⁸¹ In the context of Article 102 of the TFEU, this means that proportionality demands that the remedies go no further than (absolutely) necessary to stop the infringement.⁸²

In EU competition law, and especially relevant in the enforcement of Art. 102 of the TFEU, the proportionality of the remedy is the *starting point* of the debate on what constitutes a ‘proper’ remedy.⁸³ Reg. 1/2003, which gives substance to the Commission’s acts in relation to Art. 102 of the TFEU, interprets proportionality particularly narrowly: the Commission’s remedy must relate directly to the infringement as it was established, the Commission must be able to defend why the chosen remedy is necessary, and that no less restrictive alternatives could achieve the same outcome.⁸⁴ With proportionality forming the

76. *Id.*

77. *Id.*

78. See Organisation for Economic Co-operation and Development, *Remedies and Commitments in Abuse Cases under Article 102 TFEU*, OECD Doc. DAF/COMP/GF/WD(2022)33 7 (Dec. 12, 2022), [https://one.oecd.org/document/DAF/COMP/GF/WD\(2022\)33/en/pdf](https://one.oecd.org/document/DAF/COMP/GF/WD(2022)33/en/pdf) [<https://perma.cc/3MLT-RRR5>] (noting that the Commission has accepted the infringer’s commitment to divest without specifically ordering it).

79. See, e.g., Summary of Commission Decision COMP/39.388 and COMP 39.389 of Nov. 26, 2008, German Electricity Wholesale Market and German Electricity Balancing Market, 2008 O.J. (C 36) 1 (discussing commitments providing space for structural remedies); Colomo, *supra* note 3, at 142–43.

80. Organisation for Economic Co-operation and Development, *supra* note 78, at 7.

81. Consolidated Version of the Treaty on European Union art. 5, Oct. 26, 2012, 2012 O.J. (C 326) 18 (containing the principle of conferral, from which the European institutions derive their power). This article explains that the limits of the powers of European institutions are determined by proportionality and subsidiarity. This gives proportionality a near-constitutional role in the EU legal regime, emphasizing its importance.

82. Organisation for Economic Co-operation and Development, *supra* note 78, at 6.

83. *Id.*

84. The concept of “no less restrictive alternatives” limits how the European Commission can design remedies in abuse of dominance cases. Article 7 of Regulation 1/2003 allows structural remedies only if behavioral ones are ineffective or more burdensome. Following the Baltic Rail case, companies must be allowed to choose how they comply, leading the Commission to set outcome-based requirements without dictating exact steps. While this flexibility reduces regulatory burden, it can make remedies less effective, since firms control implementation. Remedy options are also constrained by how the case is framed—interventions must stay close to the defined market or conduct. The farther a remedy strays from the investigated behavior, the harder it is to justify. We argue the Commission’s cautious approach unnecessarily limits its ability to restore

upper limits of what can be done, the Commission is then tasked with finding an intervention that is also effective.⁸⁵ The balancing act begins with this in mind: the Commission looks for the least intrusive remedy that could be effective to resolve the infringement at hand.⁸⁶ Such a balancing act is the opposite of what happens in the US after a finding of liability.⁸⁷ Here, proportionality is but one factor among others.⁸⁸ In principle, the US antitrust authority is tasked with choosing a remedy that (1) effectively preserves competition (2) with as much certainty as possible (3) and preserves efficiency-enhancing aspects of the conduct as much as possible.⁸⁹ This means that as a matter of principle, US antitrust enforcement prefers effectiveness as a starting point, while the EU prefers proportionality as a starting point.⁹⁰ As will be shown *infra*, the framing of what is a “desirable” remedy significantly impacts the discretion of competition authorities in seeking or imposing remedies practically.⁹¹

In practice, as a result of this interpretation of proportionality, injunctive remedies are the standard in EU competition law.⁹² The Commission will aim to address the distortion of competition by issuing a cease-and-desist order, often paired with fines or periodic penalty payments to create a deterring effect.⁹³

This works well, for example, in cartel cases.⁹⁴ The cartel is dissolved and the participants are fined so that competition can restore itself.⁹⁵ Where necessary, the Commission may move on to preventative remedies that ensure the distortion of competition does not continue or re-occur.⁹⁶ Prohibitions to engage in certain contracts or the obligation to offer a choice screen for default search engines can be viewed as preventative remedies.⁹⁷

competition and should be reinterpreted. Commission Decision Case AT.39813, of 2 Oct. 2017, *Baltic Rail*, ¶ 392; Case T-201/04, *Microsoft Corp. v. Comm'n*, ECLI:EU:T:2007:289, ¶ 1123; Per Hellström, Frank Maijer-Rigaud & Franz Wenzel Bulst, *Remedies in European Antitrust Law*, 76 ANTITRUST L.J. 43, 43–63 (2009); Ioannis Lianos, *Remedies in Competition Law: In Search of Theory*, CTR. FOR L., ECON. & SOC. RSCH. PAPER SERIES (2011), https://discovery.ucl.ac.uk/id/eprint/10045075/1/Lianos_cles_3_2011new.pdf [<https://perma.cc/MR3A-UZCG>]; Ioannis Lianos, *Competition Law Remedies in Europe: Which Limits for Remedial Discretion?*, CLES RSCH. PAPER SERIES 2/2013 (2013) 3–83.

85. Organisation for Economic Co-operation and Development, *supra* note 78, at 6–7.

86. *Id.*

87. E. Thomas Sullivan, *Antitrust Remedies in the U.S. and EU: Advancing a Standard of Proportionality*, 48 ANTITRUST BULL. 377, 382–84 (2003).

88. *Id.*

89. *Id.* at 405.

90. *See id.* (emphasizing effectiveness).

91. *See infra* Part 3 (discussing US and EU remedies and what the path forward should be).

92. Fiona Scott Morton & Jasper van den Boom, *Are Competition Authorities Equipped to Combat Entrenched Digital Monopolies? Lessons from the US and EU Antitrust Cases Against Google*, SSRN 15, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5133787 [<https://perma.cc/VYQ4-D2Q5>] (last visited Sept. 24, 2025).

93. *Id.*; Mandrescu, *supra* note 21 at 357; Friso Bostoen & David van Wamel, *Antitrust Remedies: From Caution to Creativity*, 14 J. EUR. COMPETITION L. & PRAC. 540, 540–52 (2023); Colomo, *supra* note 3 at 137 (discussing that the Commission’s remedial action under Articles 101 and 102 TFEU must be able to “bring an infringement effectively to an end”).

94. Morton & van den Boom, *supra* note 92.

95. *Id.*

96. *Id.*

97. *Id.*

Despite these limitations on EU competition law remedies, there are indications in both the literature and case law that restoring the competitive condition, and even lost competition, is a valid pursuit under Article 102 of the TFEU.⁹⁸ Following *Commercial Solvents*, re-establishing the competitive process may entail giving some advantages to rivals in order to offset the advantage that the infringing firm has unduly gained from its abuse.⁹⁹ Under *Ulfex*, the Commission may intervene if it is found that competition problems persist, even if the behavior that has caused the restriction of competition has ceased.¹⁰⁰ This implies that the Commission has both the power to restore the competitive process, as well as offset competition lost as a result of the infringement.¹⁰¹ *Akzo* is another rare case where the Commission imposed remedies specifically for this purpose.¹⁰² *Akzo* had engaged in predatory pricing, which led to its rival losing important customers.¹⁰³ The Commission—together with imposing preventative remedies—prohibited *Akzo* from offering its rivals' clients lower prices than it offered its own customers.¹⁰⁴ The aim of the Commission and the Court was to allow *Akzo's* rivals to win back their customers so that competition can be restored to the state it was in before *Akzo* implemented its abusive practices.¹⁰⁵

While there does seem to be space for restorative remedies, it is unclear what limitations govern the Commission in this regard as its discretion remains debated.¹⁰⁶ Some argue that the Commission's mandate should be interpreted restrictively.¹⁰⁷ However, the Court's rulings indicate that discretion exists, but that it depends on the type of infringement and the market power held by the incumbent.¹⁰⁸ As the restorative function and its limits are not well-embedded procedurally, the Commission tends to favor caution over creativity.¹⁰⁹ The Commission's approach is not unwarranted.¹¹⁰ In the 2007 *Microsoft* judgment, the proportionality of interventions were a significant point of contention

98. Colomo, *supra* note 79 at 142–43; Bostoen & van Wamel, *supra* note 93 at 540–52; Mandrescu, *supra* note 21, at 355.

99. Joined Cases 6/73 & 7/73, *Istituto Chemioterapico Italiano S.p.A. & Commercial Solvents Corp. v. Comm'n*, 1974 E.C.R. 223, 255.

100. Case C-119/97 P, *Ulfex SA v. Comm'n*, ECLI:EU:C:1999:116, ¶ 94.

101. *Id.*; Joined Cases 6/73 & 7/73, *Commercial Solvents*, 1974 E.C.R. at 255, ¶ 45; *see also* Bostoen & van Wamel, *supra* note 93 at 542 (discussing the restorative aspects of the Commission's power); Mandrescu, *supra* note 21, at 357 (explaining an example of the Commission utilizing restorative powers).

102. Case C-62/86, *Akzo Chemie BV v. Comm'n*, ECLI:EU:C:1991:286, ¶¶ 155–56.

103. *Id.*

104. *Id.*

105. *Id.*

106. Colomo, *supra* note 3 at 137 (stating that “as a matter of positive law, it is unclear that there is room for restorative remedies . . .” under current law).

107. Christian Ritter, *How Far Can the Commission Go When Imposing Remedies for Antitrust Infringements?*, 7 J. EUR. COMPETITION L. & PRAC. 587, 589 (2016).

108. Bostoen & van Wamel, *supra* note 93 at 540–52; Mandrescu, *supra* note 21, at 355; Colomo, *supra* note 3 at 137.

109. *See* Bostoen & van Wamel, *supra* note 93 at 543 (noting that creativity is constrained).

110. *See id.* at 542 (explaining that “it is difficult to re-establish the *status quo ante* or the but-for situation”).

between the litigating parties.¹¹¹ The General Court emphasized the relevant standards.¹¹² In terms of the substantive remedies, the Court noted that “far from being disproportionate, the remedy prescribed ... is an appropriate means of putting an end to the abuse in question and of resolving the competition issues identified, while causing the least possible inconvenience to Microsoft and its business model.”¹¹³ Microsoft had raised the point that offering a version of Windows which unbundled Windows Media Player would have been disproportionate, but the Court disagreed.¹¹⁴ However, the Court did point out that the remedy was proportional as it was in fact the least intrusive measure.¹¹⁵ More importantly, while the General Court granted the Commission a win in terms of substance, it also confirmed a strict standard for proportionality by rejecting the Commission’s suggested remedy of creating a technical committee.¹¹⁶ Here, the Court found that it is not proportionate to make Microsoft pay for an independent monitoring trustee of its own compliance.¹¹⁷ Such a monitoring committee is considered standard practice in the United States for similar cases.¹¹⁸

Besides substantive issues, there is also a procedural issue that hinders the imposition of effective remedies.¹¹⁹ Procedurally, the Commission first looks at whether there have been harms to competition through an abuse of dominance, and the question on how to end the infringement only arrives at the end of the procedure.¹²⁰ The Commission then looks at what is needed to effectively end the infringement, rather than what is needed to effectively restore competition.¹²¹ The Google Shopping and Google Android cases have shown that designing remedies requires careful thought about what is needed to restore competition in light of the entrenched dominance held by digital firms and their ability to shape and steer competition in their occupied markets.¹²² Interventions that do not address entrenched market power are unable to create a significant impact on competition going forward.¹²³ Finally, it is not easy for the Commission to meet the proportionality standards for the imposition of structural remedies, and the Commission lacks experience with this type of

111. Case T-201/04, *Microsoft Corp. v. Comm’n*, ECLI:EU:T:2007:289, ¶¶ 814, 1194, 1207, 1276.

112. *Id.* ¶ 1276.

113. *Id.* ¶ 1223.

114. *Id.* ¶ 1076-80.

115. *Id.*

116. *Id.* ¶ 1221-23.

117. *Id.* ¶ 1271.

118. *U.S. v. Microsoft Corp.*, 253 F.3d 34, 100 (D.C. Cir. 2001)..

119. Mandrescu, *supra* note 21 at 354–55.

120. *Id.*

121. *Id.* at 355–56.

122. *Id.* at 354, 365.

123. *Id.* at 354–55, 385.

remedies.¹²⁴ It was significant when EVP Margrethe Vestager spoke in favor of divestitures for ad tech as a potential remedy.¹²⁵

There is now a growing interest in academic literature to make more use of remedies that restore competition, to use interim measures to prevent losing competitiveness in the relevant markets, and to better embed procedures to design remedies in the procedures of picking cases and establishing the abuse.¹²⁶ Until recently, decisional procedures often considered remedies only after the abuse had been established, and the debate on suitable remedy design formed the shortest and least comprehensive part of the analysis and debate surrounding cases.¹²⁷ The pursuit of effective remedies is now increasingly considered to be an integral part of competition law cases, perhaps on par with establishing the harm itself.¹²⁸

As of yet, the use of restorative remedies is still limited in decisional practice.¹²⁹ Instead, EU competition law is often focused heavily on dissuading firms from engaging in anti-competitive conduct through fines and financial penalties.¹³⁰ These fines can be up to 10% of the annual global turnover of the firm.¹³¹ These fines should, in principle, create a deterring effect and make the firm pay back some of its illegally gotten gains.¹³² The question, however, remains as to what level of fines would be necessary to achieve this effect outside of a cartel setting.¹³³ In the case of Google Shopping, a €2.4 billion fine after 14 years of litigation is unlikely to have created a deterring effect.¹³⁴ This can be seen by comparing Google's profit with the fine.¹³⁵ Google net profit

124. *Id.* at 388.

125. Foo Yun Chee, *Exclusive: EU Break-Up Order to Google Unlikely for Now, Sources Say*, REUTERS (Sept. 13, 2024, 12:56 PM CDT), <https://www.reuters.com/technology/eu-break-up-order-google-unlikely-now-sources-say-2024-09-13/> [<https://perma.cc/VYP7-GZHC>].

126. See generally Hellström, et al, *supra* note 84, AT 43–63); Lianos, *supra* note 84, at 3–83; Alexandre Ruiz Feases, *Sharpening the European Commission's Tools: Interim Measures*, 16 EUR. COMPETITION J. 404 (2020); Charlotte Emin, *Necessary, Important, But Seldom Used: The Unfulfilled Potential of the European Commission's Interim Measures*, 14 J. OF EUR. COMPETITION L. & PRAC., 508 (2023); Mandrescu, *supra* note 21 at 355 (all discussing ways to regulate while minimizing competition loss).

127. Mandrescu, *supra* note 21 at 354.

128. See text accompanying note 126 (describing restorative remedies in competition law).

129. Mandrescu, *supra* note 21 at 355.

130. *Fines*, *supra* note 47.

131. Council Regulation No 1/2003, art. 23, 2003 O.J. (L 1) 17. This maximum is also used for the Digital Markets Act (Art. 30 DMA).

132. Hellström et. al, *supra* note 126, at 44.

133. See *id.* (noting that a fine does not typically end infringement).

134. See “*Detecting and Detering Cartel Activity Through An Effective Leniency Program*,” U.S. DEPT OF JUST. (Nov. 21, 2000), <https://www.justice.gov/archives/atr/speech/detecting-and-detering-cartel-activity-through-effective-leniency-program> [<https://perma.cc/4GT9-VYZS>] (explaining that financial penalties are not suitable deterrence); Tom Gerken, *EU Court Rules Google Must Pay €2.4bn Fine*, BBC NEWS (Sep. 10, 2024), <https://www.bbc.com/news/articles/cjw3e1pn741o> [<https://perma.cc/465J-4KZE>] (detailing the fine).

135. See Harold Houba, Evgenia Motchenkova, & Quan Wen, *Antitrust Enforcement and Marginal Deterrence*, TINBERGEN INST. DISCUSSION PAPER, Nov. 2011, at 2, <https://papers.tinbergen.nl/11166.pdf> [<https://perma.cc/5BPW-JRLV>] (describing the way capping fines can lead to ineffective deterrence).

was about €100 billion annually in 2024 (financial year 2025).¹³⁶ The present discounted value of ten years of profit, grossed up by the probability of being prosecuted and found liable, would potentially exceed €1 trillion.¹³⁷ A court would be unlikely to find a fine of that magnitude was proportionate, and the anti-competitive behavior would therefore not be deterred.¹³⁸ With the recent adoption of private follow-on damages claims in the EU, both jurisdictions facilitate disgorgement of illegal profits after a finding of liability is achieved by the government.¹³⁹ It remains to be seen if this possibility has a practical impact in either system.¹⁴⁰

B. The Differences between Remedy Basics in the EU and U.S.

The US Supreme Court has explained that Section 2 remedies should “start from the premise that adequate relief in a monopolization case should put an end to the combination and deprive the defendants of any of the benefits of the illegal conduct and break up or render impotent the monopoly power found to be in violation of the Act.”¹⁴¹

The US system tasks the court that determined liability with designing a remedy to restore the lost competition.¹⁴² The goal of a court-ordered remedy is not to punish the defendant (who has been judged liable by this point), but rather has four elements: ceasing the illegal conduct, restoring the lost compe-

136. Tiago Bianchi, *Annual net income generated by Alphabet from 2011 to 2024*, STATISTA (Feb. 5, 2025), <https://www.statista.com/statistics/513049/alphabet-annual-global-income/> [https://perma.cc/E59T-ZM8C].

137. *See id.* (describing the profits of Google).

138. *See* Houba et al., *supra* note 135 at 4 (explaining the principle of proportionality and how it’s applied by courts); Hellström et. al., *supra* note 126, at 49 (noting that the Commission’s power in this regard is limited).

139. Directive 2014/104/EU, art. 5, 2014 O.J. (L 349) 12–13; *see also* Lukas Rengier, *In Brief: The Legal Framework for Private Antitrust Litigation in European Union*, LEXOLOGY (July 3, 2025), <https://www.lexology.com/library/detail.aspx?g=2a9b1f55-cd8a-4349-96f3-eae72f9e1cf2> [https://perma.cc/8JJW-LAL5] (describing the development of private antitrust litigation in the EU).

140. *See* Robert O’Donoghue KC & Sarah O’Keeffe, *Hitting the “Return” Key: Disgorgement in UK/EU Antitrust Laws*, CPI ANTITRUST CHRONICLE 7, Aug. 2023, <https://www.pymnts.com/wp-content/uploads/2023/08/5-HITTING-THE-RETURN-KEY-DISGORGE-MENT-IN-UK-EU-ANTITRUST-LAWS-Robert-ODonoghue-KC-Sarah-OKeeffe.pdf> [https://perma.cc/YX85-JCR5] (describing the disgorgement process and potential uses); *see also* Franklin M. Fisher, *Remedy Issues in Section 2 Cases*, U.S. DEPT. JUST.: ARCHIVES (last updated Jan. 5, 2024), <https://www.justice.gov/archives/atr/remedy-issues-section-2-cases> [https://perma.cc/T3Q5-5WT9] (discussing disgorgement and other remedies in the U.S. context); Norton Rose Fulbright, *Damages Directive Approved by EU Parliament* (Nov. 2015), <https://www.nortonrosefulbright.com/en-us/knowledge/publications/b5abe062/damages-directive-approved-by-eu-parliament> [https://perma.cc/7AKM-FVTL] (explaining the directive’s practical effects).

141. *U.S. v. Grinnell Corp.*, 384 U.S. 563, 577 (1966); *see also U.S. v. United Shoe Mach. Corp.*, 391 U.S. 244, 250 (1968) (“[I]n a [Section] 2 case . . . it is the duty of the court to prescribe relief which will terminate the illegal monopoly, deny to the defendant the fruits of its statutory violation, and ensure that there remain no practices likely to result in monopolization in the future”).

142. Fiona Scott Morton et al., *Judicial Remedies to Restore Lost Competition in the Market for General Search*, YALE TOBIN CENTER FOR ECON. POL. 3 (Sept. 4, 2024), <https://tobin.yale.edu/sites/default/files/publication-documents/2024-09/Judicial%20Remedies%20To%20Restore%20Lost%20Competition%20in%20the%20Market%20for%20General%20Search-for%20posting.pdf> [https://perma.cc/FJG2-GX29].

tion, preventing the conduct from recurring, and disgorging profit (rare).¹⁴³ Notice the emphasis on injunctive relief rather than fines.¹⁴⁴ The government rarely seeks fines or disgorgement of illegally obtained profits in civil cases, partially because the harmed parties may recover treble damages privately.¹⁴⁵ However, the monopolist is likely to find costly even a non-financial remedy because a desired conduct (from the perspective of the monopolist) is now forbidden or asset divested.¹⁴⁶ The fact that remedies are costly for the monopolist is not a barrier to imposing them; on the contrary, it is equitable.¹⁴⁷ Indeed, the Supreme Court has explained that one appropriate purpose of Section 2 remedies is to deprive the monopolist of the fruits of its illegal conduct.¹⁴⁸

A challenging but attractive feature of the US system is that designing remedies requires careful analysis.¹⁴⁹ Devising changes to a market that will restore the lost competition first necessitates a clear understanding of what went wrong, and second, a change that will improve the situation at the time it is applied.¹⁵⁰ This inquiry does not, *ex ante*, rule out any general type of remedy such as behavioral remedy or a structural change to the corporation.¹⁵¹ Rather, whichever remedies are necessary to accomplish the goals are the remedies that should be used.¹⁵² In particular, in the U.S., structural remedies are not considered to be ‘punishment’ nor are they used only for the worst conduct or for cases in which firms do not comply with the first remedy.¹⁵³ Rather, when separation of some assets is a quick and clean way to restore competition, a structural solution will be appropriate.¹⁵⁴

143. Mandrescu, *supra* note 21 at 388.

144. See Mandrescu, *supra* note 21 at 356-57 (discussing remedies meant to terminate the abusive behavior and to restore competition).

145. Einer Elhauge, *Disgorgement as an Antitrust Remedy*, 76 ANTITRUST L.J. 79, 82 (2009); *Remedy Issues in Section 2 Cases*, U.S. DEPT OF JUSTICE (Mar. 28, 2007), <https://www.justice.gov/archives/atr/remedy-issues-section-2-cases> [<https://perma.cc/4ZQZ-SRVD>].

146. See Mandrescu, *supra* note 21 at 361 (describing how non-financial remedies can affect monopolies); *Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act*, U.S. DEPT JUST. 72 (Sept. 2008), <https://www.justice.gov/sites/default/files/atr/legacy/2009/05/11/236681.pdf> [<https://perma.cc/U29F-EGJ8>] (explaining drawbacks of equitable remedies).

147. See *id.* at 355 (discussing why effective remedies are critical for antitrust regulation).

148. *U.S. v. Grinnell Corp.*, 384 U.S. 563, 577 (1966).

149. See George S. Ford, *Measured Steps: A Prudent Approach to Google Antitrust Remedies*, YALE J. REG. (Mar. 19, 2025), <https://www.yalejreg.com/nc/measured-steps-a-prudent-approach-to-google-antitrust-remedies-by-george-s-ford/> [<https://perma.cc/Z6EF-QPE6>] (explaining the analytical steps that go into designing antitrust remedies); see generally U.S. DEPT JUST, *supra* note 146 (stating it “is intended to make progress toward the goal of sound, clear, objective, effective, and administrable standards for analyzing single-firm conduct under section 2”).

150. See Mandrescu, *supra* note 21 at 359 (detailing the complications for restoring lost competition).

151. See *id.* at 361 (describing behavioral and structural remedies); Hellström et. al., *supra* note 132, at 47 (explaining that both types are aimed at correcting the infringing behavior).

152. Mandrescu, *supra* note 21 at 354; Hellström et. al., *supra* note 132, at 47.

153. See e.g., Lina Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 980 (May 15, 2019) (elaborating on the history of structural remedies in American antitrust law); U.S. DEPT JUST, *supra* note 146, at 155–58 (detailing structural remedies and past examples of their application).

154. See Herbert Hovenkamp, *Structural Antitrust Relief Against Digital Platforms*, 7 J.L. & INNOVATION 57, 71 (2024) (explaining that structural remedies are not appropriate when “firm[s] cannot ‘divest’ an asset that it does not own...”).

Another important element of US competition enforcement that is not as prevalent in the EU process is the public nature of the litigation.¹⁵⁵ When the DOJ or FTC litigates a monopolization case, a high level of information is disseminated to the public.¹⁵⁶ Documents that are collected in the process of discovery are published (largely) uncensored, giving journalists, trading partners, and the public the information they need to understand the relevant harms.¹⁵⁷ The “sunshine” on business practices that occurs during an antitrust case can itself help change the behavior of market participants and deter harmful conduct.¹⁵⁸ If it is brought to light that a firm has been overcharging consumers, abusing their trust, or offering them low quality products, the firm’s reputation will be hurt, and it may be exposed to financial liability.¹⁵⁹ The information made public in the case and relied on by the court in its opinion helps private undertakings to formulate their claims and demand compensation for damages, a process that is made easier by the recent finding of liability.¹⁶⁰

By comparison with the US, the EU decision-making process is much less transparent.¹⁶¹ The enforcement of EU competition law happens not by public litigation, at least not in first instance, but privately in front of the Commission as the public enforcer of the law.¹⁶² The Commission collects information from the investigated firm and third parties.¹⁶³ However, it only publishes non-confidential versions of its Decisions and findings.¹⁶⁴ In many instances, the public documents do not clearly explain the conduct, strategy of the dominant firm and its goals, and the nature or magnitude of the harm

155. See e.g., *Antitrust Case Filings*, U.S. DEP’T JUST.—ANTITRUST DIV., <https://www.justice.gov/atr/antitrust-case-filings-alpha> [<https://perma.cc/73L3-VQAG>] (last visited Sep. 25, 2025) (listing all current antitrust case filings).

156. *Id.*

157. Molly Anne Kelley, *How Confidential Is Discovery in DOJ Antitrust Civil Actions?*, AM. BAR ASS’N (Jan. 9, 2024), <https://www.americanbar.org/groups/litigation/resources/newsletters/antitrust/how-confidential-is-discovery-in-doj-antitrust-civil-actions/> [<https://perma.cc/49WW-L5C2>].

158. Federica Maiorano, *Assessing and Communicating the Benefits of Competition Interventions—Note by the United States*, ORG. FOR ECON. COOP. AND DEV. 2 (June 12, 2023), <https://www.justice.gov/atr/media/1347671/dl?inline> [<https://perma.cc/ZYU2-7LRS>]. See Murat C. Mungan & John M. Yun, *A Reputational View of Antitrust’s Consumer Welfare Standard*, 61 HOU. L. REV. 569, 577 (2024), <https://houstonlawreview.org/article/92813-a-reputational-view-of-antitrust-s-consumer-welfare-standard> [<https://perma.cc/AA87-6V34>] (noting that stock prices are responsive to news about a company harming consumers).

159. Mungan & Yun, *supra* note 158.

160. *Relationship Between Public and Private Antitrust Enforcement*, U.S. DEP’T JUST 4–5 (June 15, 2014), <https://www.justice.gov/d9/316212.pdf> [<https://perma.cc/XF48-TBKJ>].

161. See, e.g., *Competition Policy*, EUR. COMM’N, <https://competition-cases.ec.europa.eu/search?caseInstrument=AT> [<https://perma.cc/PR6N-H2K8>] (last visited Sep. 25, 2025) (providing fewer case documents than the U.S. equivalent).

162. See *Procedures in Article 101 Investigations*, EUR. COMM’N, https://competition-policy.ec.europa.eu/antitrust-and-cartels/procedures/article-101-investigations_en [<https://perma.cc/Y8X8-76YY>] (last visited Sep. 15, 2025) (listing the procedure for antitrust and cartel investigations); Council Regulation 1/2003, art. 7, 2003 O.J. (L 1) 9 (vesting power in the Commission).

163. EUR. COMM’N, *supra* note 162, at art. 18.

164. *Competition Policy: Access to File*, EUR. COMM’N, https://competition-policy.ec.europa.eu/index/access-file_en [<https://perma.cc/JBA6-FV6J>] (last visited Sep. 15, 2025).

caused by the anticompetitive conduct.¹⁶⁵ At least, not as well as direct insights into the documents would.¹⁶⁶ While the Commission’s written version of the enforcement decision is more elaborate, the US procedure of discovery makes more information available to the public (albeit in a less structured manner).¹⁶⁷

For cases of this magnitude, not only in terms of the size of the company, but also the gravity, complexity and persistence of anti-competitive effects, US antitrust may be better suited to restore competition than EU law.¹⁶⁸

As we explain below, the jurisdictions can be effective complements if the EU acts as a first-mover and the US as a second-mover.¹⁶⁹ The European Commission engages in fact-finding and develops theories of harm, and the lead time it creates allows the new ideas to socialize with civil society.¹⁷⁰ The EU deploys its “cease and desist” remedies and enforcers around the world can observe whether or not they restore the lost competition.¹⁷¹ Then, the slower-moving and more conservative US is able to bring a case as a second-mover.¹⁷² Ideally, US enforcers and courts build on or improve the European remedies by adding more effective provisions aimed at restoring competition.¹⁷³

1.3 Rethinking remedies in digital markets: difficult or complex?

Designing remedies for digital markets is difficult simply because they are new, and competition authorities have had to operate with little experience.¹⁷⁴ When an industry is entirely new, the dimensions and tactics of com-

165. See *id.* (“The right of access to the file does not extend to the parts of the file that contain business secrets or other confidential information...”).

166. See *id.* (providing that not all information will be directly shared with the public).

167. See text accompanying notes 155–160 (detailing transparency in U.S. antitrust enforcement). See The Sedona Conference, *Practical In-House Approaches for Cross-Border Discovery & Data Protection*, 17 SEDONA CONF. J. 397, 404–05 (2016) (explaining differences in approach to privacy in the U.S. and EU).

168. See Eleanor M. Fox, *US and EU Competition Law: A Comparison*, in GLOB. COMPETITION POL’Y 339, 341 (J. David Richardson & Edward M. Graham, eds., 1997). See generally Giorgio Monti, *Taming Digital Monopolies: A Comparative Account of the Evolution of Antitrust and Regulation in the European Union and the United States*, 67 ANTITRUST BULLETIN 40, (2022) (comparing EU and US regulatory approaches to antitrust).

169. See Anu Bradford et al., *The Global Dominance of European Competition Law Over American Antitrust Law*, 16 J. EMPIRICAL L. STUD. 731, 732 (2019) (“EU regulators typically take a more aggressive stance than American regulators reviewing the very same conduct under their respective competition laws.”); Makan Delrahim, *Facing the Challenge of Globalization: Coordination and Cooperation Between Antitrust Enforcement Agencies, The U.S. and E.U.*, U.S. DEP’T JUST. (Oct. 22, 2004), <https://www.justice.gov/archives/atr/speech/facing-challenge-globalization-coordination-and-cooperation-between-antitrust-enforcement> [https://perma.cc/7BGC-R5C8] (discussing the implication of globalization on antitrust enforcement).

170. See Klaus Kowalski, et al., *Competition in Generative AI and Virtual Worlds*, EUR. COMM’N 2–5, 7 (Sept. 2024), https://competition-policy.ec.europa.eu/document/download/c86d461f-062e-4dde-a662-15228d6ca385_en [https://perma.cc/CE4E-7WHW] (noting fact finding, theories of harm as roles of the Commission).

171. See van den Boom, *supra* note 17 (noting that the Commission favors a cease-and-desist order).

172. See Delrahim, *supra* note 169 (“...[S]haring information and ideas on specific matters can move one or both agencies toward a common approach to the case at hand, which can in turn influence and improve the agencies’ general enforcement policy direction.”).

173. See *id.* (stressing the value of inter-jurisdictional cooperation).

174. See Mandrescu, *supra* note 21 at 356, 365 (describing the challenges of designing new remedies).

petition are unfamiliar to enforcers, academics, and consumers.¹⁷⁵ Anticompetitive conduct is not initially obvious, and competition authorities cannot establish an infringement of the law without first establishing the relevant facts and competitive effects.¹⁷⁶

As the first major jurisdiction to take on Google's conduct, the EU's first finding of liability in *Google Shopping* was a landmark.¹⁷⁷ Not only was *Google Shopping* the first major antitrust case against a GAFAM company since the Microsoft cases, it also focused on a new type of abuse: self-preferencing.¹⁷⁸ However, because it was the first of its kind, it also suffered from the enforcer's lack of knowledge of the Android ecosystem and the role of search, which were later explored in the *Android* case.¹⁷⁹ As a result of the novelties of data-driven and platform-based business models, as well as the need to establish theories of harm associated with self-preferencing, the *Google Shopping* case took a significant amount of time and did not, in the end, get to the crux of the problem in search.¹⁸⁰ The length of *Google Shopping* investigation—from the start of the investigation in 2010 to the final judgment in 2024—has been cited to make the case that antitrust is too slow to deal with competition issues in digital markets.¹⁸¹ Not long after *Google Shopping*, the Commission opened a separate—and as we argue below, superior—investigation into Google's business practices related to Android.¹⁸²

The aftermath of the European Google cases has shown that even with successful findings of infringement, designing remedies in digital markets re-

175. Numerous reports have clarified the workings of digital markets as to make competition law better suited to remedy anti-competitive effects. See generally Crémer et al., *supra* note 52 (arguing how competition law should be applied to the digital economy); Jason Furman et al., *Unlocking Digital Competition, Report of the Digital Competition, Expert Panel*, HM TREASURY (Mar. 13, 2019), https://assets.publishing.service.gov.uk/media/5c88150ee5274a230219c35f/unlocking_digital_competition_furman_review_web.pdf [https://perma.cc/HW5Z-T52K] (examining opportunities and challenges for competition in the digital economy); *Big Data: Bringing Competition Policy to the Digital Era*, ORG. FOR ECON. COOP. AND DEV. (Oct. 27, 2016), https://www.oecd.org/content/dam/oecd/en/publications/reports/2016/09/big-data-bringing-competition-policy-to-the-digital-era_99479829/a1c2d55c-en.pdf [https://perma.cc/FE3V-4HLH] (discussing how to improve competition law).

176. Colomo, *supra* note 53 at 238–244.

177. European Commission Press Release IP/17/1784, *supra* note 4

178. Commission Decision Case AT.39740 of 27 June 2017, *Google Search (Shopping)*; Pablo Colomo, *Self-Preferencing: Yet Another Epithet in Need of Limiting Principles*, 43 *WORLD COMPETITION* 417–446 (2020) (discussing the cases); Herbert Hovenkamp, *Antitrust and Self-Preferencing*, *ANTITRUST*, Fall 2023, at 5–8 (describing self-preferencing and the current law).

179. See Commission Decision Case AT.40099 of 18 July 2018, *Google Android* (coming after the *Google Shopping* case); Colomo, *supra* note 178, at 420 (summarizing issues in the *Android* case).

180. Commission Decision Case AT.39740 of 27 June 2017, *Google Search (Shopping)*, at 13; Bethan John, *ECJ upholds landmark EU Google Shopping decision*, *GLOB. COMPETITION R.* (Sept. 10, 2024), <https://globalcompetitionreview.com/article/ecj-upholds-landmark-eu-google-shopping-decision> [https://perma.cc/9TZG-BJ5N].

181. Heike Schweitzer & Simon De Ridder, *How to Fix a Failing Art. 102 TFEU: Substantive Interpretation, Evidentiary Requirements, and the Commission's Future Guidelines on Exclusionary Abuses*, 15 *J. OF EUR. COMPETITION L. & PRAC.*, 222, 225 (2024), <https://doi.org/10.1093/jeclap/lpae033> [https://perma.cc/H65S-ZKSX].

182. Commission Decision Case AT.40099 of 18 July 2018, *Google Android*. See *infra* Section 2.1(B) (describing the nature and superiority of the *Android* antitrust inquiry).

quires a new way of thinking about *how* remedies are supposed to be implemented.¹⁸³ In these markets, concentration is high and attempts to create a fragmented market will likely fail.¹⁸⁴ Even if an authority manages to restore the option of easy entry, it will not change market structure if network effects and data effects are strong.¹⁸⁵ The same high concentration will continue or will appear again when entry fails.¹⁸⁶ For this reason, cease-and-desist remedies are insufficient when incumbents are sufficiently entrenched by network effects and data advantages.¹⁸⁷ In addition, digital incumbents can adjust their business models to circumvent the effects of the remedies by introducing new features, functionalities, or terms to their product, or by steering users who are easily influenced by defaults or dark patterns.¹⁸⁸

The Commission, as a result of the interpretation of the proportionality principle described above, has given a lot of leeway to Google to co-design remedies.¹⁸⁹ However, with its lack of experience, it was unable to identify that the compliance solutions offered by Google would be ineffective, or even harmful to competition.¹⁹⁰ This has resulted in the ineffective auction in *Google Shopping* and the ineffective choice screen in *Google Android*, as discussed below.¹⁹¹ In EU competition law, the scope of the investigation and the remedies are linked due to the prevailing interpretation of proportionality: a narrow scope on why certain behavior is problematic, as was the case in *Google Shopping*, can shape remedies because only the behavior in that scope can be included in the remedy.¹⁹² If the remedy is focused only on past conduct like access to an interface or widget, it may not have impact wider market problems related to the monopoly position of the firm in one or multiple markets.¹⁹³

Perhaps as a response to the difficulty of imposing effective remedies, as well as the need to prove the proportionality of structural remedies, Europe has turned to regulation.¹⁹⁴ The Digital Markets Act (DMA) represents a new way of thinking about remedies in digital markets: rather than relying on a single

183. Colomo, *supra* note 3, at 138., https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5020889 [<https://perma.cc/X7KA-SGC2>].

184. *Id.*

185. See Colomo, *supra* note 178, at 12–13 (explaining the harms of self-preferencing and network effects).

186. See Friso Bostoen & David van Wamel, *The Digital Markets Act: A Partial Solution to Antitrust's Remedy Problem*, 61(6) COMMON MKT. L. REV., 1575, 1585–86 (2024) (explaining that remedies might do little to change concentration caused by anticompetitive conduct).

187. See Mandrescu, *supra* note 21, at 357 (arguing that this remedy “may not be sufficient to restore the state of competition...”).

188. See Bostoen, *supra* note 186 at 1588 (explaining the anti-circumvention provision).

189. Bostoen, *supra* note 186, at 1584.

190. *Id.*

191. *Id.* See *infra* note Part 2.1 (discussing the Google and Android decisions.)

192. Bostoen, *supra* note 186, at 1577.

193. Alissa Cooper et. al., *Considerations for Effective Search Competition Remedies*, KGI WORKING REP. 5 (Nov. 4 2024), <https://kgi.georgetown.edu/wp-content/uploads/2024/12/KGI-Considerations-for-Effective-Search-Competition-Remedies.pdf> [<https://perma.cc/KX82-AC79>].

194. See *id.* at 8–9 (explaining the Digital Markets Act).

remedy to end a certain behavior, it creates a package of remedies that, *ex ante*, addresses different causes of insufficient contestability.¹⁹⁵ The DMA includes a number of mutually reinforcing behavioral remedies that apply across the value chain.¹⁹⁶ Judges in US antitrust cases are fully empowered to adopt the same interventions used in the DMA if the plaintiff can show that they will restore competition.¹⁹⁷

The DMA complements competition law, and pursues its own distinct goals of promoting fairness and contestability (under DMA Art. 1).¹⁹⁸ It is designed to benefit business users of “designated gatekeepers.”¹⁹⁹ In order to become a designated gatekeeper, and subject to the law, a regulated firm must operate (a) a core platform service as defined in Art. 2(2) of the DMA.²⁰⁰ These core platform services are 13 types of specific digital platforms including online search, app stores, operating systems, online social networks, and advertising services.²⁰¹ Besides operating a core platform service, the firm must have (b) gatekeeper power, which is established through quantitative thresholds.²⁰² Under Art. 3 of the DMA, the firm must have at least 45 million end-users and 10,000 business users, 75 million in EU-wide turnover or 7.5 billion in worldwide market capitalization, and have met these thresholds for at least 3 years.²⁰³ Once a firm is designated, the substantive obligations laid down in Articles 5, 6, and 7 apply to them.²⁰⁴ These obligations, 21 in total, include prohibitions against price parity behavior, anti-steering provisions, and self-preferencing, as well as obligations to allow third-parties real time access to customer data, sharing of other data, interoperability of app stores, digital wallets, and hardware, interoperability of number-independent messaging, and more.²⁰⁵

The DMA’s objective is to create rights for business users that improve their outside options, bargaining power, profits, and incentives to invest and innovate.²⁰⁶ The DMA’s obligations open platforms without, in each case, having to re-litigate market power and effects as is necessary under EU competition law.²⁰⁷ This legislative intervention allows the Commission to escape the constraint of proportionality in case-by-case investigations as proportionality has in principle been tested in the legislative procedure.²⁰⁸

195. *Id.* at 8.

196. *Id.* at 9.

197. *See id.* at 1 (noting similar goals in U.S. antitrust law and enforcement).

198. European Parliament and Council Regulation 2022/1925, art. 1, 2022 O.J. (L 265) 27 (EU).

199. *Id.*

200. *Id.* art. 2(2).

201. *Id.*

202. *Id.* art. 3(1).

203. *Id.* art. 3(2).

204. *Id.* arts. 5–7.

205. *Id.*

206. *See id.* (describing the goals of the DMA).

207. *See id.* (explaining the obligations placed on gatekeepers).

208. *See Bostoën, supra* note 186, at 1605 (stating the DMA permits more forceful intervention “without immediately running into...proportionality”).

Gatekeepers were designated in September of 2023 and compliance was required in March of 2024.²⁰⁹ The Commission immediately opened several non-compliance cases and these remain ongoing at the time of writing, with gatekeepers appealing to courts to determine if the Commission correctly enforced the law.²¹⁰ It will therefore take more time before full compliance occurs.²¹¹ The success of the DMA in resolving competition law's remedy problem is discussed *infra*.²¹²

2. ENFORCEMENT AGAINST GOOGLE: SHOPPING, ANDROID, AND SEARCH IN THE EU AND US.

This section discusses the cases against Google in the EU and the US and explains why the EU remedies were ineffective.

2.1. *The EU cases: Shopping and Android*

We study the European Google cases to demonstrate how the European Commission ventured into enforcing competition law in digital markets through fact-finding in a new sector, and how these cases have built upon one another to enhance our understanding of competition in search.

A. *Google Shopping*

Our sense is that the Commission started with the *Shopping* case as there was a cause to investigate due to complaints from the comparison-shopping sector.²¹³ The investigation was both desired by European industry and helped the Commission gain a better understanding of the search market, which allowed it to collect data for cases that would be more impactful on competition, such as *Google Android*.²¹⁴ The Android case reflects the learning from *Shopping* and presents a more comprehensive and clearer picture of harm.²¹⁵ Therefore, we only briefly discuss the Shopping case and focus on the Android matter.

209. *Digital Markets Act: Gatekeepers*, EUR. COMM'N, https://digital-markets-act.ec.europa.eu/gatekeepers_en [<https://perma.cc/9JJX-EFRK>] (last visited Sept. 15, 2025).

210. European Commission Press Release IP/25/1085, Commission finds Apple and Meta in breach of the Digital Markets Act (Apr. 22, 2025), https://ec.europa.eu/commission/presscorner/detail/en/ip_25_1085 [<https://perma.cc/R679-MQCU>].

211. *Id.*

212. *Infra* Section 2.2 (discussing the effectiveness of DMA remedies.)

213. Tom Gerken, *EU court rules Google must pay €2.4bn fine*, BBC (Sept. 10, 2024), <https://www.bbc.com/news/articles/cjw3e1pn741o> [<https://perma.cc/9MFH-VBDS>].

214. *The idealo-founder speaks: Google Shopping, the DMA, and the future of the Internet*—Interview with Albrecht von Sonntag, SCIDA PROJECT (Oct. 8, 2024), <https://scidaproject.com/2024/10/08/the-idealofounder-speaks-google-shopping-the-dma-and-the-future-of-the-internet-interview-with-albrecht-von-sonntag/> [<https://perma.cc/84U2-NZ38>].

215. See *infra* Section 2.1(B) (discussing the Android case and its defined harms).

The *Google Shopping* case introduced self-preferencing as a novel form of abuse.²¹⁶ The Commission accused Google of using its position in horizontal search, to simultaneously promote its own comparison-shopping service (Google Shopping) while demoting the results of other comparison-shopping services, by ensuring that they would only appear further down in the organic search results.²¹⁷

Google Shopping focused on the relationship between horizontal search and the downstream market for comparison shopping.²¹⁸ The Commission started by defining the markets and made sure to maintain a very narrow scope for the comparison shopping (CSS) market to demonstrate the detrimental effect of Google's changes on competition.²¹⁹ The Commission first argued that horizontal search sets itself apart from vertical search activities due to its function, breadth, and functionalities.²²⁰ Horizontal search requires providing the user with a broad range of options from the open web, and its purpose is to redirect users as quickly as possible.²²¹ Vertical search services (VSS) on the other hand aim to give users very detailed information provided by curated suppliers on a specific category of goods; users typically stay on the site to make a decision.²²²

VSS is downstream from horizontal search: users will use the first to find the latter, but not vice versa.²²³ CSS, in turn, are a specific subcategory of VSS, as not all VSS are interchangeable: a person interested in comparing financial products will not be interested in results related to vacation travel, for instance.²²⁴ CSS also set themselves apart from online advertising, retailers, or merchant platforms.²²⁵ They do not simply advertise but rank the products on the basis of information from suppliers.²²⁶ They do not sell products themselves, but only allow retailers to be included in the ranking by offering information and remuneration, and they are not merchant platforms as they do not facilitate direct transactions.²²⁷

216. Commission Decision Case AT.39740, of 27 June 2017, *Google Search (Shopping)*.

217. *Id.*, ¶ 32.

218. *Id.*, ¶ 11.

219. *Id.*, ¶ 191–92.

220. *Id.*, ¶ 445.

221. *Id.*, ¶ 164.

222. *Id.*, ¶¶ 444–451 (explaining the importance of user traffic for vertical searches).

223. *See id.*, ¶¶ 145–183 (explaining the differences in vertical search services and horizontal search services) (To get these high quality queries, Google Search relies in web crawling, a technique that is not used for the provision of specialized search services. The Commission establishes that horizontal search is an upstream activity related to vertical search, as horizontal search engines are used by users to discover and access vertical search services, but not the other way around.).

224. *See id.* (describing the nature of Google's generic and specialized search engines.)

225. *Id.*, ¶ 8196–246 (making these distinctions and elaborating on them).

226. *Id.*, ¶ 12.

227. *Id.*, ¶ 209.

The narrow focus of the case allowed the Commission to carefully establish the harms associated with Google's behavior.²²⁸ To establish its new theory of harm—self-preferencing—the Commission had to make sure that it properly demonstrated *how* this behavior harmed competition exactly.²²⁹ The Commission found that Google's strategy was twofold: it placed its own comparison shopping services prominently at the top of the page in a dedicated "Shopping Box," with pictures and rich descriptions.²³⁰ Meanwhile, it used its power over the search algorithm to demote competing CSS suppliers and push them down in the unpaid search results page.²³¹ The Commission's study found that this was sufficient to suppress competition, as users almost always click one of the top five results.²³² Results on the second page, where many competing CSS-suppliers ended up, were almost never clicked.²³³ The Commission found Google's strategy to be effective.²³⁴ Competing CSS suppliers started losing a significant share of their traffic after Google amended its algorithms.²³⁵ Once they were demoted, CSS suppliers entered into a spiral of decline: fewer clicks made them less attractive for retailers, which in turn made their offering less attractive for users.²³⁶

The *Google Shopping* investigation demonstrated how easily users were actually influenced by the use of nudges and dark patterns, and how much control platform operators had over downstream markets.²³⁷ The *Google Shopping* case has shifted the debate away from the idea that competition is simply one click away and signaled that antitrust enforcement in digital markets is actually desirable and necessary.²³⁸ The Commission's insights into the precarious conditions of competition related to search gave rise to the Android case, where the Commission looked at what was happening upstream of search.²³⁹

228. *Id.*, ¶¶ 264–340. The Commission treats each Member State as its own jurisdiction, it then invests significant efforts into establishing dominance in each of these national markets. It ultimately finds that Google has over 95% market share in horizontal search in each of the national markets except for the United Kingdom and Czech Republic, where it holds 94.9% and 84.4% respectively. It established dominance on the basis of these market shares and the accompanying analysis.

229. *Id.*, ¶ 223.

230. *Id.*, ¶ 424(e).

231. *Id.*, ¶ 344.

232. *Id.*, ¶ 454.

233. *Id.*, ¶ 455.

234. *Id.*, ¶ 461.

235. *Id.*, ¶ 462. The Commission argues that there are bidirectional strengthening effects, as foreclosing competing CSS redirects money that could have gone to those competitors back to Google, which allows it to strengthen its own CSS and general search service. As competitors in CSS have less resources to compete with Google, they become less likely to gain critical mass so that they can enter into competition in the market for general search.

236. See *Google Search (Shopping)*, *supra* note 216, ¶¶ 444–588 (explaining that in the years following Google's changes, traffic for competing CSS providers dropped steeply, ranging between 30 and 90%. The Commission dedicated significant resources to demonstrate this was attributable to Google's changes.).

237. *Id.*

238. *Id.* ¶¶ 331–671.

239. See *Bostoen & Van Wamel*, *supra* note 186, at 1589 (noting that proceedings against platforms can be easily closed and platforms can get around remedies).

B. *Google Android*

In the *Android* case, the Commission investigated Google's contractual web of ties that helped it to leverage its position from the licensable mobile OS market towards its monopoly in horizontal search and to strengthen the position of its other proprietary apps.²⁴⁰ This is arguably the first case where the Commission investigated the workings of complex digital ecosystems and the complex multi-directional leveraging strategies employed by Google to entrench its position in several markets.²⁴¹ The Android investigation involved a large number of relevant markets: smart mobile devices, operating systems for smart mobile devices; smart mobile app stores; application programming interfaces; general search services; and web browsers.²⁴²

The Commission explained how Google used an open-source strategy to harness network externalities in its rise to dominance.²⁴³ Google has offered its Android OS free of charge through its Open Handheld Alliance since 2007, which allows OEM's and mobile network operators to use Google's Android OS and Software Development Kits for their devices.²⁴⁴ Google did the majority of the development for Android, approved the designs by third parties for their Android-based devices, and held control over when new features or updates would be made available.²⁴⁵ This gave Google the power to coerce developers into compliance—for instance—by refusing security updates or access to features if they took actions to lessen Google's market power.²⁴⁶

The Commission studied how Google used three types of contracts: Mobile Application Distribution Agreements (MADA's), Anti-fragmentation agreements (AFA's), and revenue-sharing agreements (RSA's) to ensure its continued dominance in (licensable) mobile operating systems, its proprietary mobile applications such as Google Maps, Chrome, and Google Play, and to fortify its dominance in mobile-based online search.²⁴⁷

Developers could only install Google's proprietary apps, including Google Play, if they entered into the MADA.²⁴⁸ The MADA imposed a number of obligations on the manufacturers, including: they had to send their final software build for approval by Google; had to install all of Google's mandatory apps following MADA if they chose to pre-install one of Google's apps; accept that Google could update the selection of mandatory and optional apps that should be installed following the MADA (from 12 in 2009 to 30 in 2014); had to place Google Search, the Play Store and a Folder named 'Google' on

240. Commission Decision of 18 July 2018 Case AT.40099, *Google Android*, 2019 O.J. (C 402) ¶¶ 1–20.

241. See Case T-604/18, *Google and Alphabet v. Commission*, ECLI:EU:T:2022:541, ¶¶ 104–119 (Sept. 14, 2022) (explaining the concept of ecosystems in Article 102 TFEU).

242. Commission Decision in *Google Android*, *supra* note 240, ¶ 73.

243. *Id.* at ¶¶ 120–124.

244. *Id.* at ¶¶ 123–124, 149–151.

245. *Id.* at ¶¶ 123–130.

246. *Id.* at ¶¶ 128, 1055–1058, 1132–1133, 1140, 1352.

247. *Id.* at ¶¶ 155–159, 738–739.

248. *Id.* at ¶ 156(2).

the home page; and had to set Google Search as the default search engine for all web access points.²⁴⁹ The MADA alone created disincentives to pre-install third-party apps with similar functions as Google's proprietary apps out of a fear for 'bloat', where users are turned away from a certain device due to the pre-installation of duplicate apps.²⁵⁰

Developers could only enter into the MADA if they also accepted the AFA.²⁵¹ Under the AFA, developers committed to (i) produce only hardware that is compatible with authorized Android OS and (ii) software that is distributed solely on authorized Android devices; (iii) not take any action that may lead to the fragmentation of the Android ecosystem; and (iv) not in any way develop software for devices *derived* from authorized Android.²⁵² The AFA ensured that developers would not start offering devices that were partially Android-based, but with more space for third-party apps.²⁵³ This tightened the stranglehold Google held over developers in its Open Handheld Alliance.²⁵⁴

Finally, Google cemented its position as the default and exclusive search engine through revenue sharing agreements.²⁵⁵ Any OEM that exclusively pre-installed Google Search for all search access points would receive a remuneration of up to 40% of the revenues generated from search if accessed through a channel that fell within the scope of the agreement.²⁵⁶ These complementary agreements ensured that Google search was the exclusive option at search access points, and that it acquired traffic and valuable user data to monetize.²⁵⁷

The anti-competitive effects following such behavior are particularly salient in relation to Google Play.²⁵⁸ While OEMs were formally allowed to pre-install third-party app stores, Google's conditions steered users to the Google app ecosystem.²⁵⁹ The Play Store expanded to include the 'Google Play Services' software layer, which provides background services and APIs for app integration.²⁶⁰ While technically distinct products, OEMs had to acquire both as part of the GMS bundle.²⁶¹ In particular, apps that connect to the APIs located in the Play Store will not work on a handset without the Play Store.²⁶² Control over access to the Play Store thus gave Google the protection of an ap-

249. *Id.* at ¶¶ 172–188.

250. *Id.* at ¶¶ 827–828.

251. *Id.* at ¶ 156(2).

252. *Id.* at ¶ 157.

253. *Id.* at ¶¶ 159–162, 1030.

254. *Id.* at ¶¶ 159–162, 1033, 1346.

255. *Id.* at ¶¶ 165, 192, 1200.

256. *Id.* at ¶¶ 200–209, 1325.

257. *Id.* at ¶ 1348.

258. *Id.* at ¶¶ 621, 733.

259. *Id.* at ¶¶ 134–199.

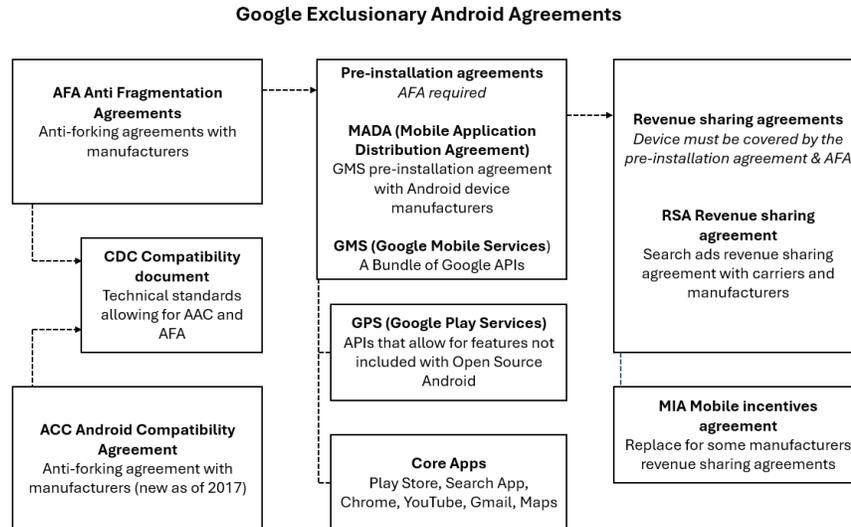
260. *Id.* at ¶¶ 138, 145.

261. *Id.* at ¶¶ 138–147.

262. *Id.* at ¶¶ 138–147, 623.

applications barrier to entry.²⁶³ Google exerted control over channel partners' treatment of Google Search.²⁶⁴

FIGURE 1: FLOWCHART OF THE GOOGLE AGREEMENTS²⁶⁵



The Commission specified that Google held a near-monopoly of 90% market share specifically in the market for licensable mobile operating systems.²⁶⁶ This market delineation would help to differentiate between licensable OS Android on the one hand and non-licensable iOS offered by Apple on the other.²⁶⁷ The finding that these are distinct markets helped the Commission to prove not only Google's market power in the market for Operating System, but also the downstream markets for Google's proprietary apps.²⁶⁸ This scoping of the case avoided the need to incorporate Apple's role.²⁶⁹ However, this also means the agreement between Apple and Google for the pre-installation of

263. See *id.* ¶¶ 138–147 (describing how Google used Google Play to restrict entry); *United States v. Microsoft Corp.*, No. 98-1232, 1998 U.S. Dist. LEXIS 14231, at *13 (D.D.C. Sept. 14, 1998) (naming the barrier to entry in the case); *U.S. v. Microsoft: Proposed Findings of Fact*, U.S. DEP'T OF JUST., <https://www.justice.gov/atr/us-v-microsoft-proposed-findings-fact> [<https://perma.cc/2VM9-AW2H>] (last visited June 27, 2025) (noting that “[t]he applications barrier to entry exists because applications written to Windows will not run on other operating systems and other operating systems cannot effectively compete against Microsoft unless they can offer PC users a wide array of applications similar, in depth and breadth, to the vast set of applications that exists for Windows.”).

264. Commission Decision in *Google Android*, *supra* note 240, ¶¶ 756–876.

265. Complaint at 22, *United States v. Google*, (2020), (No. 1:20-cv-0310), <https://www.justice.gov/archives/opa/press-release/file/1328941/dl> [<https://perma.cc/7ESE-X4FQ>].

266. Commission Decision in *Google Android*, *supra* note 240, ¶¶ 256, 1430.

267. *Id.* at ¶¶ 238–240.

268. See *id.* at ¶¶ 238–240, 439, 451, 590–673 (explaining that the Commission estimates 90-100% market share for the Play Store).

269. Jasper van den Boom & Fiona Scott Morton, *Recalibrating Regulation 1/2003: How to Restore Proportionality in EU Remedy Design*, 14, [<https://perma.cc/M99B-NAFC>]

Apple iOS, as well as competition between the Operating Systems, was completely outside of the scope of the Commission's investigation.²⁷⁰

C. *The Importance of the Google Android Case*

The Commission found that together, these agreements created a single coherent 'carrot-and-stick' strategy that helped Google to sustain its dominance across its core digital markets.²⁷¹ The Commission's investigation gave a first in-depth and evidence based analysis of the coercive ties between platforms in mobile ecosystems, and the level of dependency of third parties.²⁷² In this sense, the investigation was trailblazing.²⁷³

Despite its revolutionary nature, the Commission investigation also had a number of shortcomings.²⁷⁴ First, the Commission had to wholly ignore Google's relationship with Apple to define markets in the strongest way possible.²⁷⁵ It considered Android and iOS to be wholly distinct markets.²⁷⁶ This conclusion does not reflect the real competition between Apple and Google for sales of mobile devices to consumers.²⁷⁷ Worse, it means any agreement between Apple and Google for exclusivity or default status does not occur with the only rival able to sponsor a competing search engine entrant at scale.²⁷⁸ The Commission did not take into consideration the agreement between Apple and Google to exclusively install search on iOS at all, despite the focus of the case on exclusivity agreements with Android OEMs.²⁷⁹ The setting required either the Commission to expand the market to include Apple as a competitor, or else forgo the inclusion of Apple's role in Google's monopolization of the search market.²⁸⁰

Second, in terms of the analysis of the abuse itself, the Commission did not go after the agreements and the tying behavior per se.²⁸¹ Instead, it divided the abusive behavior into three categories that were the *result* of these agreements: 1) tying of the Google Search app with the Play Store; 2) the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the AFAs; and 3) Portfolio-Based Revenue share payments conditional on the pre-installation of no competing general search service.²⁸² As discussed in the upcoming section, this framing of the case allowed Google to comply by making interventions only related to these specific

270. *Id.* at 10–15.

271. Commission Decision in *Google Android*, *supra* note 240, ¶ 739.

272. *Id.*

273. *Id.*

274. *Id.* at ¶ 46.

275. *Id.* at ¶¶ 238, 243.

276. *Id.* at ¶ 238.

277. *Id.* at ¶ 241.

278. *Id.* at ¶ 515.

279. *Id.* at ¶ 243.

280. *Id.*

281. *Id.* at ¶ 749.

282. *Id.* at ¶¶ 754–1322.

ties.²⁸³ Google quickly replaced these mechanisms with other terms and conditions that were *technically* compliant with the orders given by the Commission, but created the same results in practice.²⁸⁴ As a result of the design of Art. 102 TFEU and Reg. 1/2003, the Commission is limited to fighting the symptoms of the market power rather than its source.²⁸⁵ As digital business models are highly dynamic and adaptive, a digital firm can circumvent the effects of these orders relatively easily.²⁸⁶

2.2. Assessing the Outcome of the EU Cases: The (in)effectiveness of EU Remedies

The Commission was bold in its pursuit of investigations against Google. When it started its investigations into Google Shopping and Android, there was still much uncertainty related to the operation of digital markets and how competition should apply.²⁸⁷ Not only that case, but also the design of remedies required novel approaches and considerations.²⁸⁸

In practice, the effect of the imposed remedies has been limited, and the remedies have been widely criticized as falling short.²⁸⁹ The Commission's status as a first mover may have caused it to be overly cautious in designing the remedies.²⁹⁰ Furthermore, neither case was focused on competition in search across all devices, including iOS.²⁹¹ Third, a major problem with remedy design in complex markets is the risk of capture or circumvention by the undertaking in question.²⁹² In both Google cases in the EU, the Commission allowed Google to co-design the imposed remedies aimed at ending the infringement.²⁹³ In *Google Shopping*, this resulted in an auctioning mechanism, and in *Google Android*, in the imposition of choice screens.²⁹⁴ In both instances, Google has implemented the orders in a way that did not significantly impact competition.²⁹⁵

283. *Id.* at ¶ 1393.

284. *Id.* at ¶ 1477.

285. *Id.* at ¶ 1390.

286. *See id.* at ¶ 1477 (noting that even though Google changed its practices, this was not a mitigating circumstance because their conduct was still ongoing and abusive).

287. *See id.* at ¶ 256 (referencing a 2010 US case and the related uncertainty).

288. *Id.* at ¶ 1392.

289. Thomas Höppner, *Google's (Non-) Compliance with the EU Shopping Decision: A Study Based Upon Empirical Data of 25 Comparison Shopping Services* (2020) 15–33, [<https://perma.cc/3F5F-PL2L>]; Francesco Decarolis, Muxin Li & Filippo Paternollo, *Competition and Defaults in Online Search* (2024) (working paper) 2, [<https://perma.cc/G8CS-LHRU>].

290. Colomo, *supra* note 3, at 137–39.

291. Commission Decision in *Google Android*, *supra* note 240, ¶ 238.

292. Colomo, *supra* note 3, at 146.

293. *See id.* at 151 (explaining that this is a set practice in EU law enforcement: in light of proportionality, the Commission should not prescribe one single way to comply if there are multiple ways in which the undertaking can comply with the Commission's orders).

294. *Id.* at 157.

295. *See* Höppner, *supra* note 21 (explaining that the anti-competitive measures implemented by Google in Europe to comply with the *Google Shopping* decision were ineffective).

This is a conundrum faced by competition authorities and regulators in new fields: the information asymmetry between the firm and the regulator invites dialogue, yet this dialogue can easily be misused to hinder the imposition of effective remedies.²⁹⁶ The sections below detail how the remedies have been implemented and where things went wrong.²⁹⁷

A. *Remedies in Google Shopping: A Story of Effective Circumvention*

The remedies for *Google Shopping* were implemented on September 27, 2017, following a prohibition decision.²⁹⁸ Google was required to end the infringement and treat competing comparison-shopping services no less favorably than its own within search results.²⁹⁹ The Commission allowed flexibility in compliance, as long as it ensured that it treated “competing comparison shopping services [CSS’s] no less favourably” than its own.³⁰⁰

Google responded by introducing an auction for placing comparison-shopping services in its Shopping Box.³⁰¹ Google separated its shopping service from its search unit, but the Shopping Box’s placement and design remained unchanged, still favoring those within it.³⁰² Google also functionally separated Google Shopping from its horizontal search business.³⁰³ As a result, CSS’s were competing with an “independent” Google Shopping in the auctions for placement in the Shopping Box hosted by Alphabet Holding Corp.³⁰⁴

There were multiple issues with the auction.³⁰⁵ First, Google incentivized advertisers to make small changes to their webpages so that they could bid in the auctions, thus creating more pressure on CSS suppliers and raising prices.³⁰⁶ Second, CSS suppliers continued to be demoted in unpaid search re-

296. See generally Stephanie Mlot, *FTC Report Reveals Google’s Skewed Results*, PCMAG (Mar. 20, 2015), <https://uk.pcmag.com/internet-3/40587/ftc-report-reveals-googles-skewed-results> [<https://perma.cc/DR/E9-A5SX>] (finding that the FTC’s investigation of Google’s anti-competitive tactics revealed “questionable behavior” yet the FTC ultimately decided not to take action on practices that the bureau of competition warned would result in harm to consumers and innovation).

297. See *infra* Sections 2.2.A–B (explaining how remedies have been put into place and where issues arose).

298. See Daniel Boffey, *Google price comparison site to compete with rivals for top search slot*, THE GUARDIAN (Sep. 27, 2017, 2:52 PM EDT) <https://www.theguardian.com/technology/2017/sep/27/google-shopping-to-compete-with-other-retailers-for-top-search-slot> [<https://perma.cc/WCL2-N74C>] (reporting on the implementation of the remedy by Google); Commission Decision Case AT.39740, of 27 June 2017, *Google Search (Shopping)*.

299. Commission Decision Case AT.39740, *supra* note 298, at 204, 214.

300. *Id.* At 204.

301. See Höppner, *supra* note 21 (describing Google’s response to the Commission decision being an auction mechanism, giving equal rights to comparison shopping services to the Shopping Unit).

302. See *id.* (explaining that the Shopping Unit still favored Google).

303. See *id.* (discussing how Google split up its Shopping Units from its standalone website).

304. See *id.* (explaining that CSSs competed with Google under the auction mechanism).

305. See *id.* (discussing, among other things, competing CSSs not finding any new business opportunities, uptake of the compliance mechanism being very low initially, and the mechanism upholding existing abuse).

306. See *id.* (discussing advertising firms meeting minimum requirements to qualify as CSSs, precluding genuine CSSs from financing or growing their services).

sults.³⁰⁷ Third, the auction turned third-party CSS suppliers into Google's customers instead of competitors.³⁰⁸ The results were devastating—competing CSS suppliers continued to lose market share and traffic, where traffic did reach their websites, their margins for conversion shrunk by nearly 50% because they had to pay more to Alphabet.³⁰⁹

The *Google Shopping* case is widely considered a failure in terms of remedies.³¹⁰ Despite numerous calls by stakeholders, the Commission has not enforced any changes to the compliance mechanism.³¹¹ As the DMA now introduces a blanket probation for self-preferencing in Art. 6(5) of the DMA, it can be concluded that the remedies imposed following the Google Shopping investigation have remained ineffective until they were supplanted by the DMA, casting doubt on the legacy of the fourteen year investigation.³¹² Its impact will primarily be felt through private litigation, particularly in the form of follow-on damages.³¹³ Following the CJEU's confirmation of the *Google Shopping* decision, CSS suppliers are seeking at least €12 billion in compensation.³¹⁴

B. *Google Android: An Attempt at an Easy Fix for a Complicated Problem*

The compliance mechanisms introduced following *Google Android* can be divided into three categories: 1) a choice screen for Google search services and browsers; 2) changes to Google's licensing practices, in particular related to its AFA agreements; and 3) changes to its revenue sharing agreements.³¹⁵

307. See *id.* (explaining that all competing CSSs with Google are reduced in search general results pages).

308. See *id.* (addressing how the compliance mechanism effectively forces CSSs to bid for a product ad from Google).

309. See *id.* (describing the compliance mechanism as a failure); see also Frédéric Lambert et al., *Open Letter of 14 European CSSs*, ECOMMERCE NEWS (Nov. 22, 2018), <https://ecommercenews.eu/comparison-shopping-services-call-for-actions-against-google/> [<https://perma.cc/2TAJ-REVR>] (detailing industry opposition to the remedies); Thomas Höppner, *Duty to Treat Downstream Rivals Equally: (Merely) a Natural Remedy to Google's Monopoly Leveraging Abuse*, EUR. COMPETITION & REGUL. L. REV., Mar. 2017, at 208, 223, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3040605 [<https://perma.cc/9KFN-BBRU>] (explaining how Google's market share of over ninety percent throughout the EU means that its practices on the general search market directly impact comparison shopping market competition); Marek Kzysztof Kolasinski, *Interpretation of the Remedy in the Google Shopping Decision and Its Consequences*, 4 EUR. COMPETITION & REGUL. L. REV. 4, 7–8 (2020) (explaining and visualizing this effect).

310. See Höppner, *supra* note 21 (describing Google's compliance mechanism as a failure)

311. See *id.* (expressing CSSs' frustrations with Commission's hesitation to enforce its decision).

312. See Council Regulation 2022/1925, art. 6(5), 2022 O.J. (L 265) 1, 35 (prohibiting self-preferencing in ranking and related indexing and crawling).

313. See, e.g., Karin Matussek, *Google Facing at Least €12 Billion in Civil Claims Across Europe*, BLOOMBERG NEWS (May 13, 2025), <https://www.bloomberg.com/news/articles/2025-05-13/google-facing-at-least-12-billion-in-civil-claims-across-europe?embedded-checkout=true> [<https://perma.cc/2Q8A-SZ5F>] (revealing Google's \$13.3 billion in damage claims from several price comparison websites across the EU).

314. *Id.*

315. See Hiroshi Lockheimer, *Complying with the EC's Android decision*, GOOGLE (Oct. 16, 2018), <https://blog.google/around-the-globe/google-europe/complying-ecs-android-decision/> [<https://perma.cc/TSL8-D49B>] (disclosing the compliance mechanisms to be used by Google).

1. *Choice screens for default browsers and search*

Following the Commission’s remedy order in 2018, Google introduced separate choice screens for the default browser and default search engines.³¹⁶ Competitors could bid in an auction for a chance to be a default option.³¹⁷ The design of the choice screen was problematic.³¹⁸ A seemingly minor detail, namely the choice to conduct the auction on a ‘per appearance’ or ‘per install’ basis, led to perverse incentives for bidders in the auction.³¹⁹ By relying on a system of payment ‘per install’, many of the bidders were firms that focused on extracting maximum revenue from their users, thereby requiring fewer installs.³²⁰ This would incentivize them to issue high bids so as to gain some users.³²¹ As a result, the choice screens were usually filled with untrustworthy search and web browser suppliers, making Chrome and Google Search the only attractive options.³²²

Besides the perverse incentives in the auction, the choice screen itself was poorly designed.³²³ The choice screen for web browsers only offered an illusion of choice: Google Chrome would still be pre-installed irrespective of the user’s choice, the selected browser would only be installed as an addition.³²⁴ The two choice screens—presented sequentially—also had the effect of confusing users which viewed the web browser and search engine as connected to one another.³²⁵ As a result, the choice screen for web browsers was retired and only the choice screen for a default search engine remained.³²⁶

The search choice screen was also problematic initially but has seen an evolution.³²⁷ The original choice screen offered four choices to users, one of which was Google Search.³²⁸ The screen was only presented when setting up

316. Michael Ostrovsky, *Choice Screen Auctions*, NAT’L BUREAU OF ECON. RSCH., 2 (Nov. 2020), https://www.nber.org/system/files/working_papers/w28091/w28091.pdf [https://perma.cc/LQG8-98PB].

317. *Id.* at 3.

318. *Id.* at 3–4.

319. *See id.* at 4 (explaining that the choice screen auction leads CSSs to prioritize revenue over numbers of users).

320. *See id.* (explaining how the per install auction incentivizes bidders to maximize revenue per install action).

321. *Id.*

322. *See id.* at 5 (displaying Google’s success in the auction in comparison to competitors).

323. *See id.* at 13 (explaining how participants were upset by the design).

324. *See id.* at 4–5 (discussing the illusion of choice where the probability that an alternative search engine will be chosen is minimized).

325. *See id.* at 4 (explaining the results of the search engine being shown to the user in the choice screen).

326. *See* Oliver Bethell, *Changes to the Android Choice Screen in Europe*, GOOGLE (June 8, 2021), <https://blog.google/around-the-globe/google-europe/changes-android-choice-screen-europe/> [https://perma.cc/92H6-8PJ8] (discussing the choice screen’s usage for selecting a default search provider).

327. *Google Finally Amends Choice Screen Remedy to Prevent Non-Compliance Proceedings in EU Android Case*, HAUSFELD (June 9, 2021), <https://www.hausfeld.com/en-gb/what-we-think/perspectives-blogs/google-finally-amends-choice-screen-remedy-to-prevent-non-compliance-proceedings-in-eu-android-case> [https://perma.cc/D9FQ-FYET] (explaining the changes Google made to its choice screen).

328. George Nguyen, *Google’s search choice screen had virtually no effect on search market share, perhaps by design*, SEARCH ENGINE LAND (Feb. 17, 2021, 8:00 AM), <https://searchengineland.com/googles-search-choice-screen-had-virtually-no-effect-on-search-market-share-perhaps-by-design-346167> [https://perma.cc/SA4L-6TCN].

the device for the first time and included no description of the available choices or justification for their inclusion.³²⁹ The screen could make users feel that the other search engines are illegitimate.³³⁰ In many instances, users were right to have doubts, as the competing search engines had conquered their spot through the faulty auction.³³¹

Critics of the choice screen argued that while a choice screen could be helpful in stimulating competition, Google's version was insufficient to do so.³³² To produce any pro-competitive effects, the choice screen would have to include objective, neutral, and transparent selection criteria, a sufficient number of options, equal treatment (equally prominent placement, no predisposition towards one choice or a status quo, accompanied by a short description), choice of default provider without technical restrictions, and user friendly design.³³³ It should also be offered to new and existing users and there should be no auction mechanism or exclusion based on revenue.³³⁴

The Commission entered into discussion with Google about changes to the choice screen based on these principles, and in September 2021—following 3 years of negotiations—Google made four changes to its choice screen³³⁵:

- “Free participation of general search services in the Choice Screen remedy, i.e., an end to the auction mechanism.”³³⁶
- “Objective criteria for the inclusion of up to 12 general search services in the Choice Screen, i.e., no more artificial shortening of the list of possible choices—and Google Search has to fulfill the same participation criteria.”³³⁷
- “No possibility for the participation of (fake) search engines that merely syndicate search results and ads from Google.”³³⁸

329. See *About the Choice Screen*, ANDROID (June 12, 2023), <https://www.android.com/choicescreen/> [<https://perma.cc/U78T-PGKZ>] (explaining that the choice screen, before and after its revision, appears during initial device setup).

330. See Megan Gray, ‘Choice Screen’ Fever Dream: Enforcers’ New Favorite Remedy Won’t Blunt Google’s Search Monopoly, TECH POL’Y PRESS (Feb. 15, 2024), <https://www.techpolicy.press/choice-screen-fever-dream-enforcers-new-favorite-remedy-wont-blunt-googles-search-monopoly/> [<https://perma.cc/QBT2-ZVSK>] (questioning if consumers are educated enough for the choice screen to make a difference).

331. See Ostrovsky, *supra* note 316, at 3–5 (discussing how the auction operates and has questionable incentives).

332. See *id.* at 13–14 (criticizing Google’s implementation of the choice screen auction on a “per install” basis but clarifying that choice screen auctions are not ineffective *per se*).

333. See *id.* (arguing that objective function, transparency, and other criteria should be used to evaluate the solutions).

334. See *id.* at 13–14 (explaining recommendations for choice screen implementation).

335. See Bethell, *supra* note 326 (announcing the changes); *Google finally amends Choice Screen remedy to prevent non-compliance proceedings in EU Android case*, HAUSFELD FOR THE CHALLENGE (June 09, 2021), <https://www.hausfeld.com/en-gb/what-we-think/perspectives-blogs/google-finally-amends-choice-screen-remedy-to-prevent-non-compliance-proceedings-in-eu-android-case> [<https://perma.cc/BVJ8-YY5G>] (listing the four changes Google would need to make it).

336. HAUSFELD FOR THE CHALLENGE, *supra* note 327.

337. *Id.*

338. *Id.*

- “Google pledged not to collect search data via the third-party search services.”³³⁹

With these changes, Google has seemingly addressed most of the concerns raised by stakeholders.³⁴⁰ However, Google’s initial strategy provided it with around 4 years of delays during which time it could entrench its own search engine further.³⁴¹ There are two issues that remain. One, the choice is likely still offered only once at the installation of the device, meaning that users become locked in into their choice unless they reset their phone through a factory reset.³⁴² Two, Google still does not provide a brief explanation of the search engine and why it is being offered.³⁴³ Decarolis and Li have estimated that the change in percentage of market shares following the introduction of the choice screen remains in the single digit until this day and may be as low as just 2%.³⁴⁴

2 *Changes to licensing practices*

Google made the following changes to its licensing practices to comply with the Commission’s orders: a) it updated its compatibility agreements to allow OEMs to distribute Android forks on their devices, and replaced its AFAs with Android Compatibility Commitments (ACCs)³⁴⁵; b) allows OEMs to license the GMS bundle separately from Google Search and Google Chrome³⁴⁶; and c) offers separate licenses for Google Chrome and Google Search.³⁴⁷

The Competition & Markets Authority (CMA) studied Google’s compliance strategy in its 2021 market investigation into mobile ecosystems.³⁴⁸ The CMA observes that Android manufacturers that want to license Google’s apps and services, including Google’s proprietary (APIs), are still required by Google to enter an ACC under which they agree to maintain compatibility with a baseline version of Android as set out in the so-called Compatibility Defini-

339. *Id.*

340. *See id.* (stating that the changes Google made “address the most pressing concerns”).

341. The same strategy has benefitted Google even more in Google Shopping, where it was never required to amend its implementation of the imposed remedy. Höppner, *supra* note 21 (explaining that Google’s compliance mechanism following the *Google Shopping* decision simply upheld the abuse and the Commission did not investigate the non-compliance); *see also* HAUSFELD, *supra* note 327 (noting that Google failed to comply for three years, during which time its compliance mechanism benefitted Google and was a financial power play).

342. *See* ANDROID, *supra* note 329 (explaining that the choice screen, before and after its revision, appears during initial device setup).

343. *See id.* (displaying the choice screen, which lacks explanation of why it is offered).

344. Francesco Decarolis et al., *Competition & Defaults in Online Search*, AM. ECON. J. 369, 373 (2025).

345. *Appendix E: Google’s Agreements with Device Manufacturers and App Developers*, COMPETITION & MARKETS AUTHORITY 1 (2021), https://assets.publishing.service.gov.uk/media/62a0d5cbe90e07039ba54ee/Appendix_E_-_Google_agreements_with_device_manufacturers_and_app_developers.pdf [<https://perma.cc/VP2R-2N7V>]; Lockheimer, *supra* note 315.

346. Lockheimer, *supra* note 315.

347. *Id.*

348. Competition & Markets Authority, *supra* note 345.

tion Document (CDD).³⁴⁹ Only OEMs that adhere to the compatibility standards can enter into the MADA and acquire Google's GMS license, including Chrome and Search.³⁵⁰

The CMA finds that, while Google has changed its licensing practices, the effects remain mostly the same.³⁵¹ OEMs are technically free to offer Android devices that do not comply with Google's CDD.³⁵² However, for these devices they cannot obtain any of Google's proprietary services as they are excluded from entering into the MADA and subsequent licenses.³⁵³ The question is then whether OEMs want to offer any smartphones that are based on an Android fork without any of Google's proprietary apps along their selection of "compliant" Android devices.³⁵⁴ It seems that there is little to no interest in practice to develop non-compliant Android forks with this all-or-nothing offer, so OEMs remain loyal to Google and offer only fully Android compatible devices.³⁵⁵ Again, there is an illusion of choice, with little to no impact on competitive or licensing practices.³⁵⁶

3. *Changes to revenue sharing agreements*

The revenue sharing agreements were amended following the Commission's decision in *Google Android* as well.³⁵⁷ OEMs are no longer required to exclusively pre-install Google Search, as this is prohibited by the decision.³⁵⁸ Instead, they must meet the requirements set out in so-called Placement Agreements (PA), which ensure that a number of Google Apps are prominently placed in a manner Google dictates.³⁵⁹ Under the PAs, Google pays manufacturers 'activation payments' for each device on which they pre-install the Google Search or Google Search and Chrome apps and satisfy certain placement obligations for either (i) the Google Search app, or (ii) the Google Search

349. *Id.*

350. *Id.*

351. *Id.*

352. *Id.* ¶ 22.

353. Commission Decision Case AT.40099 of 18 July 2018, *Google Android*, ¶¶ 172–73; *Strategic Market Status Investigation Into Google's Mobile Platform: Proposed Decision*, COMPETITION & MKTS. AUTH. (July 23, 2025), ¶ 7.20 https://assets.publishing.service.gov.uk/media/6880b349f47abf78ca1d351e/Proposed_decision.pdf [<https://perma.cc/2THJ-LWE8>].

354. See COMPETITION & MKTS. AUTH., *supra* note 351, at ¶¶ 22–23 (stating that Google said "nothing...prevents manufacturers from using non-Android OSs alongside or instead of Android," while the European Commission deemed Google to hamper the development of Android Forks and obliged manufacturers not to fork Android).

355. See COMPETITION & MKTS. AUTH., *supra* note 352, ¶ 6.130(a) (discussing limited competitive pressure and licensing constraints even after changes.)

356. See *id.* (noting that "OEMs...would face significant financial and resource/time costs if they switched away from Google's Android" and "that a rival Mobile Platform would be unlikely to replicate Google's payments").

357. COMPETITION & MKTS. AUTH., *supra* note 350, ¶ 68.

358. See Commission Decision Case AT.40099 of 18 July 2018, *Google Android*, ¶¶ 5(12) (noting that this was one of Google's abusive behaviors).

359. COMPETITION & MKTS. AUTH., *supra* note 350, ¶ 8.

and Chrome apps.³⁶⁰ If manufacturers pre-install and comply with the placement requirements for Google Chrome in addition to Google Search they earn a substantially larger payment per device.³⁶¹ Only Android compatible devices are eligible for these payments, as entry into the PA agreements is conditional on entering into the EMADA and obtaining the GMS bundle.³⁶² In 2022, the General Court found that the Commission had insufficiently proven the anti-competitive effects associated with revenue sharing agreements.³⁶³ The Commission has not appealed this part of the judgement before the CJEU.³⁶⁴ At the time of writing, Alphabet still offers PAs and has not reverted to offering RSAs, indicating that there is little difference between the two from Google's perspective.³⁶⁵ The validity of PAs and RSAs will have to be re-investigated in the ongoing case against Google under Art. 6(5) of the DMA.³⁶⁶

With this implementation of the imposed remedies, Google creates the appearance that it adheres to the conditions set by the Commission.³⁶⁷ They have severed the ties between Google Search, Google Chrome, and the Play Store.³⁶⁸ Moreover, they no longer offer Revenue Sharing Agreements based on the exclusive pre-installation of Google Search.³⁶⁹ However, Google continues to offer their licenses on the basis of a complex web of contractual ties, and the actual impact on OEMs incentives to distribute alternative forks, or to stimulate the use of competing web browsers and search services, is minimal.³⁷⁰ In the end, the links between contractual obligations and agreements produce equivalent effects to the tying identified in the Android case.³⁷¹

As of yet, no competitive forks of Android have entered the market.³⁷² This is the liminal space in which EU remedies operate: the infringement has

360. *Id.*

361. *Id.* ¶ 54.

362. *Id.* ¶¶ 60, 66.

363. Case C-738/22 P, Google LLC, Alphabet Inc. v European Commission, ECLI:EU:C:2025:463, ¶¶ 57 (Jun. 19, 2025).

364. *Id.*

365. CMA, *Mobile Browsers and Cloud Gaming* Appendix B, ¶¶ 14–15, 18–19, 32 (Mar. 12, 2025), https://assets.publishing.service.gov.uk/media/67d1ac36a005e6f9841a1d95/Appendix_B_-_Google_OEM_Agreements_1.pdf [<https://perma.cc/MGX7-TK5N>].

366. See European Commission Press Release IP/24/1689, *Antitrust: Commission Opens Investigation into Google's Practices in Online Search and Digital Advertising* (Mar. 25, 2024), https://ec.europa.eu/commission/presscorner/detail/en/ip_24_1689 [<https://perma.cc/QNC4-N9KQ>].

367. *Appendix G: Pre-installation, Default Settings and Choice Architecture for Mobile Browsers*, COMPETITION & MKTS. AUTH. (June 10, 2022), ¶¶ 7–8, https://assets.publishing.service.gov.uk/media/61b867eb8fa8f5037d67b8f9/Appendix_G_-_Pre-installation_default_settings_and_choice_architecture_for_mobile_browsers_.pdf [<https://perma.cc/9Q5C-YEUG>].

368. *Id.*

369. See *Department of Justice Wins Significant Remedies Against Google*, U.S. DEP'T OF JUSTICE, (Sept. 2, 2025), <https://www.justice.gov/opa/pr/departement-justice-wins-significant-remedies-against-google> [<https://perma.cc/2TV2-RCC7>] (stating that Google cannot enter or maintain agreements that condition revenue share payments on maintainin Google Search).

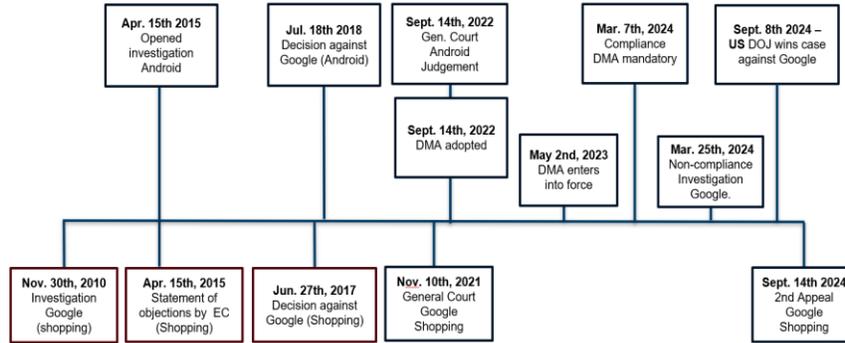
370. See COMPETITION & MKTS. AUTH., *supra* note 365, ¶ 4–20 (discussing these arrangements).

371. *Id.* at Fig. 1.

372. See *Mobile Ecosystems Market Study Final Report*, COMPETITION & MKTS. AUTH. ¶ 3.24 (June 10, 2022), https://assets.publishing.service.gov.uk/media/63f61bc0d3bf7f62e8c34a02/Mobile_Ecosystems_Final_Report_amended_2.pdf [<https://perma.cc/VS2D-2DHF>] (noting that in tablets, Amazon's Fire OS, an Android

technically been ended, but competition is far from restored (or even promoted).³⁷³ This type of faux-compliance can delay actual restoration of competition for a long time, as demonstrated in the timeline hereunder.³⁷⁴

FIGURE 2: THE TIMELINE OF INVESTIGATIONS INTO GOOGLE, AND INEFFECTIVE REMEDIES.³⁷⁵



2.3. *The United States: Search*

The Obama administration inherited antitrust authorities that had spent eight years under Republican leadership and had not brought a major monopolization case, nor litigated any major merger.³⁷⁶ The administration invested in the capabilities of the agencies and began a more aggressive approach.³⁷⁷

Fork, is the third largest OS); Proposed Decision, *supra* note 353, ¶¶ 6.71, 6.124–6.130 (explaining that the Amazon Fire OS is a limited constraint because it is only available on tablets and not smartphones).

373. See *Market Study Into Mobile Ecosystems: Final Report Summary*, COMPETITION & MKTS. AUTH. 1 (June 10, 2022), https://assets.publishing.service.gov.uk/media/62a228228fa8f50395c0a104/Final_report_summary_doc.pdf [<https://perma.cc/4MH7-SE6U>] (finding concerns years after the EU decision).

374. See Figure 2 (illustrating the timeline of investigations into Google and ineffective remedies).

375. Commission Decision Case AT.40099 of 18 July 2018, *Google Android*, ¶ 15; Case T-604/18, *Google, LLC v. Commission*, ECLI:EU:T:2022:541 (Sept. 14, 2022); Commission Decision Case AT.39740, of 27 June 2017, *Google Search (Shopping)*; Case T-612/17, *Google LLC v. Eur. Comm'n*, ECLI:EU:T:2021:763 (Nov. 10, 2021); Case T-612/17, *Google LLC v. Eur. Comm'n*, ECLI:EU:C:2024:726 (Sept. 10, 2024); *About the Digital Markets Act (DMA)*, EUR. COMM'N, https://digital-markets-act.ec.europa.eu/about-dma_en [<https://perma.cc/RJ6T-7MYN>] (last visited Sept. 21, 2025); S. Michael, *DMA Timeline: A Path Towards Tech and Consumer Freedom*, AVOW (Dec. 12, 2024), <https://avow.tech/blog/dma-timeline-digital-markets-act/> [<https://perma.cc/6G63-XFL3>]; *Commission Opens Non-Compliance Investigations Against Alphabet, Apple and Meta Under the Digital Markets Act*, EUR. COMM'N (Mar. 25, 2024), https://digital-markets-act.ec.europa.eu/commission-opens-non-compliance-investigations-against-alphabet-apple-and-meta-under-digital-markets-2024-03-25_en [<https://perma.cc/Y65F-A9ZD>]; *United States v. Google*, 747 F. Supp. 3d 1, (D.C. Cir. filed Aug. 5, 2020).

376. William F. Shughart II & Diana W. Thomas, *Antitrust Enforcement in the Obama Administration's First Term: A Regulatory Approach*, CATO INST. POL'Y ANALYSIS 1 (Oct. 22, 2013), https://www.cato.org/sites/cato.org/files/pubs/pdf/pa739_web.pdf [<https://perma.cc/JRK8-B43E>].

377. See *id.* (finding that “the Obama administration has been significantly more active in enforcing the antitrust laws with respect to proposed mergers than his two predecessors”).

In the area of digital platforms, Google was the first to trigger an investigation.³⁷⁸ After two years of work, the FTC declined to bring a case against Google in early 2013.³⁷⁹ This decision was controversial, even more so when part of the staff report—every second page—was leaked.³⁸⁰ The leaked materials made it clear that the FTC staff were in favor of bringing a case but the Commissioners voted unanimously against it.³⁸¹ Given what we know today, the FTC decision is difficult to comprehend.³⁸² But our understanding of how the different parts of Google’s strategy operated together benefits greatly from the work over the better part of a decade by the European Commission and others.³⁸³ In 2012, the harms Google was causing to competition in search were not widely recognized.³⁸⁴

In what many observers considered to be a surprising development, the Trump Department of Justice, along with a few states, filed a complaint against Google in search in October 2020.³⁸⁵ This was followed in December 2020 by a Google search complaint from a large bipartisan group of states and territories.³⁸⁶ The FTC filed one platform monopolization case against (then) Face-

378. See Amit Singhal, *Supporting choice, ensuring economic opportunity*, GOOGLE: <https://googleblog.blogspot.com/2011/06/supporting-choice-ensuring-economic.html> [<https://perma.cc/RNV9-T85N>] (acknowledging the FTC investigation).

379. *Statement of the Federal Trade Commission Regarding Google’s Search Practices*, FED. TRADE COMM’N 1, (Jan. 3, 2013), https://www.ftc.gov/sites/default/files/documents/public_statements/statement-commission-regarding-googles-search-practices/130103brillgooglesearchstmt.pdf [<https://perma.cc/5GHM-HT82>].

380. Brent Mullins, Rolfe Winkler & Brent Kendall, *Inside the U.S. Antitrust Probe of Google*, WALL ST. J. (Mar. 19, 2015), <https://www.wsj.com/articles/inside-the-u-s-antitrust-probe-of-google-1426793274> [<https://perma.cc/8H2H-4PPQ>]; Mlot, *supra* note 296.

381. Christian Bergqvist, *Revisiting FTC’s 2013 Google Decision*, KLUWER COMPETITION L. BLOG (Mar. 28, 2021), <https://legalblogs.wolterskluwer.com/competition-blog/revisiting-ftcs-2013-google-decision/> [<https://perma.cc/6GXY-NSGC>]; Steve Henn & Audie Cornish, *FTC Closes Google Antitrust Investigation Without Penalties*, NPR (Jan. 3, 2013, 3:00 PM ET), <https://www.npr.org/2013/01/03/168564147/ftc-closes-google-anti-trust-investigation-without-penalties> [<https://perma.cc/YD4L-GNR2>].

382. See *United States v. Google LLC*, 747 F. Supp. 3d 1, 124 (D.D.C. 2024) (finding Google to possess monopoly power).

383. See, e.g., Christian Bergqvist, *What the Department of Justice Can Learn from the European Union’s Antitrust Investigations Into Google*, PROMARKET (Nov. 12, 2020), <https://www.promarket.org/2020/11/12/departement-justice-european-union-antitrust-investigations-google-comparison-lessons/> [<https://perma.cc/Q3YC-SY78>] providing an example of what can be learned from the European Commission’s efforts).

384. Rishi Iyengar, *Google Narrowly Dodged Lawsuit Over Search Monopoly*, TIME (Mar. 20, 2015), <https://time.com/3752011/google-antitrust-ftc-report-lawsuit/> [<https://perma.cc/U544-V3PG>] (noting that the FTC considered a lawsuit against Google in 2012 but dropped the investigation in 2013).

385. *United States v. Google LLC*, 747 F. Supp. 3d 1, 24–29; *Justice Department Sues Monopolist Google for Violating Antitrust Laws*, U.S. DEP’T OF JUST. (Oct. 20, 2020), <https://www.justice.gov/opa/pr/justice-department-sues-monopolist-google-violating-antitrust-laws> [<https://perma.cc/2ZVT-MDBH>]; Leah Nylen, *Trump Administration Launches Antitrust Salvo Against Google*, POLITICO (Oct. 20, 2020, 12:42 AM), <https://www.politico.com/news/2020/10/20/justice-department-antitrust-case-google-430281> [<https://perma.cc/2VTP-N9D2>].

386. Complaint at 1–5, *Colorado v. Google LLC*, No. 1:20-cv-03715, 2020 WL 7405690 (D.C. Cir. Dec. 17, 2020) (hereinafter “States Search Complaint”).

book also in December of 2020.³⁸⁷ Ten years after the EU had begun their enforcement, United States' enforcement against digital platforms began.³⁸⁸

A. *The USDOJ Search Complaint*

The US DOJ Search Complaint³⁸⁹ lays out the story of Google's rise from "the Darling of Silicon Valley" to a goliath accumulating money using "anti-competitive tactics to maintain and extend its monopolies."³⁹⁰ The complaint alleges three markets, noting that, overall, Google's revenue from ads placed on its SERP totals \$40 billion annually.³⁹¹ The first market is general search services.³⁹² This is the search engine service with which most users are familiar.³⁹³ A second market is that for search advertising,³⁹⁴ which usually takes the form of text but can include images and more.³⁹⁵ And the last market is that of general search text advertising.³⁹⁶ This includes the familiar sponsored results that lie among the organic results on the SERP, as well as any text ads running at the top or down the side of the page.³⁹⁷

The case's focus was therefore focused on search capabilities rather than on one vertical integration like Google Shopping or the Android ecosystem.³⁹⁸ For this reason, the complaint more closely targeted—more than either the EU Android or Shopping cases—the competition problem created by Google in search.³⁹⁹ The conduct identified includes exclusive dealing with channel partners within Android as well as those outside, such as phone carriers and Apple which took payments to make Google search the exclusive default search engine on its handsets.⁴⁰⁰ The arrangement benefitted both parties—as market di-

387. Federal Trade Commission v. Facebook, 581 F. Supp. 34, 41 (D.D.C. 2022).

388. See *id.* (stating that the case was filed in 2020); European Commission Press Release IP/10/1624, *Antitrust: Commission Probes Allegations of Antitrust Violations by Google* (Nov. 30, 2010), https://ec.europa.eu/commission/presscorner/detail/en/ip_10_1624 [<https://perma.cc/9ZGP-WZ7U>] (stating that the EU opened their investigation in November 2010).

389. Complaint at 1–2, *United States v. Google*, 2020 WL 6152114 (D.C. Cir., filed Oct. 20, 2020) (hereinafter USDOJ Search Complaint).

390. *Id.* at 3.

391. *Id.* 4–5. This colossal sum is then distributed with partners in return for the partners' favoring of Google's search engine.

392. *Id.* at 28.

393. See *id.* at 29 (noting that Google Search has approximately 88 percent market share).

394. *Id.* at 31–32.

395. See *id.* At 31–32 (explaining that this market "consists of all types of ads generated in response to online search queries").

396. *Id.* at 32–33.

397. *Id.*

398. *Id.* at 3.

399. See *id.* (calling out Google's general search services, search advertising, and general search text advertising, but not Android).

400. *Id.* at 16.

vision often does—because Apple obtained a reported 40% of Google’s search revenue in exchange for not entering search itself.⁴⁰¹

Google’s dominance in the search markets was demonstrated by the DOJ’s illustration: “When a consumer takes a new iPhone or iPad out of its box, all the significant access points default to Google as their general search provider.”⁴⁰² Since almost half of all handsets in the US are Android devices, the complaint also covered Google’s agreements within the Android ecosystem with its OEMs.⁴⁰³ Channel partners serving both Apple and Google users include mobile phone carriers and non-Google browsers.⁴⁰⁴ The complaint describes how Google shared its search revenue in each of these areas in exchange for favorable placement of its search engine.⁴⁰⁵ The mobile carriers play an important role in the US because they finance the purchase of an expensive handset for liquidity-constrained consumers by allowing them to pay over time.⁴⁰⁶ Carriers have sometimes differentiated themselves by commissioning exclusive handsets from OEMs and customizing them to some extent.⁴⁰⁷ This position has made them valuable partners for any entity benefiting from a pre-installed or default position on the device.⁴⁰⁸

The complaint describes how Google ingeniously converted what was a fragmented market of search engines, portals, browsers, and OEMs into a system that fed queries to Google search and kept them away from rivals.⁴⁰⁹ One tactic used by Google was the adoption of an open-source operating system, Android.⁴¹⁰ Google could position the OS to not be a “threat”⁴¹¹ to the other players in the market while at the same time devising contracts to “retain control of something we gave away.”⁴¹² The anti-forking (AFA) and mobile application distribution agreements (MADA) ensured that entry by a competing operating system or rival search engine was almost impossible.⁴¹³ The decision reflects the response to the European Commission’s Android case in Google’s

401. *Id.* at 27; Rohan Goswami, *Apple gets 36% of Google search revenue from Safari, Alphabet witness says*, CNBC (Nov. 14, 2023, 9:42 AM EST), <http://cnbc.com/2023/11/14/apple-gets-36percent-of-google-search-revenue-from-safari-alphabet-witness.html> [<https://perma.cc/XQ7H-QKNT>].

402. USDOJ Search Complaint, *supra* note 389, at 16.

403. *See id.* at 15 (noting that “roughly 40 percent of mobile-device usage comes from devices that use Android” and is a search distribution channel).

404. *Id.* at 19.

405. *Id.*

406. *See T. Thomas R. Beard, George S. Ford & Lawrence J. Spiwak, FCC Overreach in Mobile Device Regulation? A Legal and Economic Analysis*, PHOENIX CTR. FOR ADVANCED L. & ECON. PUB. POL’Y STUDS. 3–5 (Sept. 2024), <https://phoenix-center.org/PolicyBulletin/PCPB69Final.pdf> [<https://perma.cc/C9JN-EPNS>] (describing the financing process).

407. *See FCC to look at exclusive cellphone deals*, ABC NEWS (June 20, 2009, 2:36 AM), <https://abcnews.go.com/Technology/story?id=7887364&page=1> [<https://perma.cc/JXQ8-UR8Y>] (describing some of these exclusive deals).

408. *See id.* (explaining that “the manufacturer gets a higher price or extra promotional spending on the phone” in these exclusive deals).

409. USDOJ Search Complaint, *supra* note 389, at 3–6.

410. *Id.* at 20.

411. *Id.*

412. *Id.* at 21.

413. *Id.* at 41, 47.

behavior.⁴¹⁴ By this date Google had removed the required exclusive default and replaced it with an optional revenue share.⁴¹⁵ Secondly, Google had changed the Anti Fragmentation Agreement that was designed to block the entry of rival operating systems to a contract named “Android Compatibility Commitments.”⁴¹⁶ This second contract is slightly weaker than the original.⁴¹⁷

The DOJ’s search complaint is written to be narrow and extremely consistent with the *Microsoft* case.⁴¹⁸ For this reason, it is inherently conservative.⁴¹⁹ While this may reflect the compromises needed to issue it during a Republican administration, it also made the complaint robust and likely contributed to the eventual success of the litigation.⁴²⁰ The complaint is also squarely focused on general search and search advertising.⁴²¹

The complaint from the states takes a more holistic approach by considering both actual and potential competitors in general search.⁴²² The potential competitors are specialized search services (sometimes called “verticals” in the business press).⁴²³ These services spring up in areas where ads are the most lucrative such as travel, finance, and shopping, and typical offer curated and proprietary content in a narrow area.⁴²⁴ Example of successful specialized search include Amazon in shopping, Lending Tree in finance, Expedia in travel, Yelp in local, and so forth.⁴²⁵ But because these rivals attract the most expensive ads, they are the rivals that do the most financial damage to Google with their competition.⁴²⁶ And, at the same time, they obtain a significant fraction of their customers from customers who begin their journey with a general search engine.⁴²⁷ This combination of attributes makes foreclosure of specialized search a financially attractive strategy for a dominant provider of general search services.⁴²⁸

414. Case T-604/18, *Google, LLC v. Commission*, ECLI:EU:T:2022:541, ¶ 586 (Sept. 14, 2022).

415. See USDOJ Search Complaint, *supra* note 389, at 20–21 (stating that “Google used revenue sharing to attract partners to Android”).

416. *Id.* at 23.

417. See *id.* at 40 (noting that the anti-forking agreements limit the feasibility of a viable market path for a search competitor).

418. See *United States v. Microsoft Corp.*, 253 F.3d 34, 34–415 (D.C. Cir. 2001)(explaining the monopoly maintenance framework).

419. USDOJ Search Complaint, *supra* note 389, at 5–6 .(comparing Google’s actions to Microsoft’s and noting they are similar).

420. USDOJ Search Complaint, *supra* note 391, at 8–54 (detailing the industry background, Google’s anticompetitive behaviors and effects).

421. *Id.* at 3.

422. States Search Complaint, *supra* note 386, at 5–6. .

423. *Id.* at 8.

424. *Id.* at 58.

425. See Brody Hall, *What Is Vertical Search? A Deep Dive into Niche Search Engines*, LOGANIX (Oct. 11, 2023), <https://loganix.com/what-is-vertical-search/> [<https://perma.cc/D4V4-V724>] (providing examples of vertical searches).

426. States Search Complaint, *supra* note 386, at 15–16.

427. *Id.*

428. See *id.* at 58–59 (highlighting Google’s method of foreclosure, “[i]n today’s marketplace, consumers do not as readily bypass general search by going directly to a specialized vertical provider’s website in the way they could in a more competitive marketplace. As a result, specialized vertical providers generally rely on

By placing a specialized search rival at the bottom of the search engine results page—or raising its costs by charging for an ad at the top of the page—users are more likely to click on a Google property (e.g. Google Flights) or a Google ad which will generate revenue for Google.⁴²⁹ In addition to revenue, more users of a particular service like Google flights generate valuable data that raise the service’s quality over time.⁴³⁰ The propensity of consumers to click on results at the top of the page regardless of their quality generates significant market power that Google could sell or leverage as desired.⁴³¹ Because specialized search arguably includes comparison sites such as shopping competitors of Google Shopping like the European complainants (Idealo), the states’ complaint is more inclusive of the EU theories of harm than the federal complaint.⁴³²

A second difference between the states’ complaint and the DOJ’s complaint is the allegation that Google limited interoperability of its advertising tool so that advertisers who wanted to use Bing could not coordinate SA360.⁴³³ The effect of this was to foreclose Bing from the advertiser business.⁴³⁴ This conduct occurred in a different market than the one for general search services.⁴³⁵ Despite promising advertisers it would operate SA360 neutrally, Google refused to align its SA360 with the advertising features available on Bing.⁴³⁶ The States’ Search Complaint specifically highlights that this lack of interoperability of features was not due to a technical inability on Google’s part; rather, it was the result of a purposeful harming of competition through favoring its (Google’s) own platform.⁴³⁷ We will not discuss this theory of harm further because the court did not find liability.⁴³⁸

The evidence in the complaint, which came out clearly at trial, makes clear the extent of Google’s preinstallation and use of exclusive defaults.⁴³⁹ The complaint lists all manner of goods from smart speakers with a pre-installed voice assistant to computers which are purchased ready-to-use out of the box.⁴⁴⁰ Even where Google operates in a closed ecosystem (such as Ap-

Google for 30 to 40 percent of their traffic, although the number can be considerably higher in some cases. Because of specialized vertical providers’ reliance on Google for traffic, they increasingly must purchase general search and general search text advertising in addition to appearing in organic search results to acquire customers.”); *id.* at 63 (showing how Google limits vertical search providers’ ability to advertise).

429. *See id.* at 65–68 (placing non-paid results near the bottom (i.e. exclusion from the “OneBox” feature)); *id.* at 68. (pushing organic results down the page in favor of paid advertisements).

430. *See id.* at 5 (explaining that complex algorithms are constantly learning and the volume of data accelerates its learning).

431. *Id.* at 68.

432. *Id.* at 64–65 (explaining how “Google degrades access provided to specialized services”).

433. *Id.* at 55–57.

434. *Id.* at 54–55.

435. *See id.* at 53–54 (focusing on the market for advertising, not searching).

436. *Id.* at 55–56. .

437. *Id.* at 19–20.

438. *See* *United States v. Google*, 2025 WL 2523010, at *102–103 (D.C. Cir. 2025) (rejecting the Plaintiffs’ self-preferencing prohibitions).

439. States Search Complaint, *supra* note 386, at 41.

440. USDOJ Search Complaint, *supra* note 391, at 14, 50.

ple's iPhone which runs on Apple's proprietary iOS software), Google enjoys default status as the search provider for Apple Safari.⁴⁴¹ This accounts for a 55% share of the mobile browser market notwithstanding Google Chrome's 35% market share as the preinstalled browser (running Google search) on Android devices.⁴⁴² In the US, Google Chrome (running Google search) occupies 60% of the market in computer web browsing.⁴⁴³ Default status is key here as consumers, according to the DOJ, may not know they can change their default browser and—even if they do—may not take the time to switch to a competitor's search engine.⁴⁴⁴ In exchange for default status and exclusive distribution as the default general search service on mobile devices, Google enters revenue sharing agreements (“RSAs”) with device manufacturers (Samsung and Apple) and even mobile network carriers (such as AT&T).⁴⁴⁵ Mobile incentive agreements (“MIAs”), which include requirements to comply with numerous implementation steps, have now replaced some RSAs with network carriers and manufacturers.⁴⁴⁶ These also include a promise not to preinstall competitors' general search services on Android devices.⁴⁴⁷

The second market contains the third market.⁴⁴⁸ That is, general search text advertising is part of the broader umbrella of general search advertising.⁴⁴⁹ That broader market is comprised of the whole universe of ads resulting from online search queries.⁴⁵⁰ This includes general search text ads provided by Google and Bing, and specialized ads provided by Amazon, Expedia, and Yelp.⁴⁵¹ These ads are responsive to consumer queries on general search, meaning that “offline” ads are excluded from the market.⁴⁵² Finally, the third market consists of general search text ads which appear on a SERP just like any ordinary (organic) search result but with a “subtle notation” that marks them out as paid advertising rather than organic.⁴⁵³ Both of these ads respond to consumers who have an identified need.⁴⁵⁴ Because those consumers are already online with a specific need, the complaint argues—and the court

441. *Id.* at 16.

442. *Id.*

443. *Id.* at 17.

444. *Id.* at 18.

445. *Id.* at 25–27 (noting the agreements with Samsung, Apple, and carriers; note the Apple RSA includes search access points not limited to Safari; now, Google is the exclusive default for the voice assistant Siri and the system-wide search engine Spotlight).

446. *Id.* at 26.

447. Amended Complaint at 26–27, *United States v. Google*, 2021 WL 2820496 (D.C. Cir. Jan. 15, 2021) (No. 1:20-cv-3010) (laying out the “MIA” that involves foregoing preinstallation).

448. *See id.* at 32 (“There is also a relevant product market for general search text advertising that is wholly contained within the broader search advertising market.”). *Ibid.*, ¶101.

449. *Id.*

450. *See id.* at 28–29, 31–32 (defining the “search advertising” market as all ads triggered by online search queries).

451. *Id.* at 31–32.

452. *Id.* at 32.

453. *Id.* at 32–33.

454. *See id.* at 32–33 (describing the markets for each type of advertising).

found—that there are only poor substitutes for this type of advertising, and therefore a monopolist over it could exercise market power.⁴⁵⁵

B. *The Google Search Decision*

The *Google Search* case opinion was delivered in August 2024.⁴⁵⁶ This decision granted victory to the government on the most important issues.⁴⁵⁷ The *Google* court did not find for the government on all counts.⁴⁵⁸ It denied that Google enjoyed a monopoly in the market for search advertising,⁴⁵⁹ but it found that Google enjoyed a monopoly in the market for general search text advertising.⁴⁶⁰ The court ruled for Google on the question of whether its practices around SA360 violated Section 2.⁴⁶¹

The government’s claim succeeded on the ground that Google monopolized the market for general search services (“GSS”) and general text advertising, contrary to § 2 of the Sherman Act 1890.⁴⁶² As usual, the definition of the product market was pivotal.⁴⁶³ Google claimed the market should include “competitors” such as Amazon and rejected the government’s claim that there even is such a market in GSS.⁴⁶⁴ Rather, Google favored a market for “query responses.”⁴⁶⁵ The court rejected Google’s argument on the basis of substitutability: Amazon and other platforms keep search results within their “walled gardens”⁴⁶⁶ and do not provide “organic links”⁴⁶⁷ which enable the user to navigate to other websites.⁴⁶⁸ Indeed, Google had itself recognized GSS as a distinct product and a separate market, since it evaluates its search quality in comparison with other general search engines (“GSEs”) and not general query response providers (such as Amazon).⁴⁶⁹

Having found for the government on the market definition, the court turned to market power and found that, by query volume, Google had an overall 89.2% market share in GSS (increasing to 94.9% on mobile devices).⁴⁷⁰ Bing’s share paled in comparison at 5.5% for all queries and 1.3% on mobile

455. *Id.* at 34.

456. *United States v. Google*, 747 F.Supp.3d 1, 1 (D.C. Cir., 2024).

457. *See id.* at 136–39 (finding Google has a monopoly in the general search text ads market).

458. *See id.* (finding liability in GSS and general search text ads, but that the evidence does not support a market for general search advertising).

459. *Id.*

460. *Id.* at 138–39 (illustrating the court’s position on the general search text advertising market was that “Google does not consider competitors’ pricing when it sets text ads prices.”).

461. *Id.* at 181 (rejecting § 2 liability for SA360 conduct).

462. *Id.* at 136–39, 187.

463. *Id.* at 107–12 (discussing the product market).

464. *Id.* at 107–08.

465. *Id.*

466. *Id.* at 58.

467. *Id.* at 110.

468. *Id.* at 110.

469. *Id.* at 113.

470. *Id.* at 119.

queries.⁴⁷¹ Meanwhile, Yahoo and DDG's share were under 3% for all device types.⁴⁷² The court found that Google was indifferent as to whether a deterioration in its GSE would cause users to go elsewhere, such as its stranglehold of the market.⁴⁷³

The court found evidence of exclusionary conduct that both established and maintained monopoly power in GSS.⁴⁷⁴ In particular, the court focused on the power of defaults for capturing search traffic.⁴⁷⁵ Google paid channel partners to effectively exclude other GSS competitors, either through exclusive defaults, pre-installation, or placement.⁴⁷⁶ For instance, Google's agreement with Apple meant that Google had to be preloaded as the "exclusive default"⁴⁷⁷ on every search access point on iOS devices in exchange for a percentage share of search revenue.⁴⁷⁸ With echoes back to *Microsoft*, the court found it theoretically possible for Apple to load a third-party search application or browser, in addition to its proprietary Safari browser which defaulted to Google.⁴⁷⁹ However, it also found that implementing a third-party software was not a realistic prospect because the market reality was that manufacturers were weary of loading additional or superfluous applications ("bloatware").⁴⁸⁰ Likewise, the court found that consumers are very responsive to defaults even though they are technically able to change the search engine in a browser or on a handset.⁴⁸¹ Consumers are also more likely to click on results at the top of a list rather than scroll down it.⁴⁸² The court's extensive reliance on behavioral economics marks the first major antitrust case where this branch of economics has played such a prominent role.⁴⁸³ The court also found that the brand and reputation of Google created an entry barrier for rival search engines.⁴⁸⁴

The payments to Apple—more than \$20 billion in 2023—were so large that they undermined Google arguments that defaults were not valuable.⁴⁸⁵ The

471. *Id.*

472. *Id.*

473. *Id.* At 118(stating "In addition, Plaintiffs point to Google's admission that it does not 'consider whether users will go to other specific search providers (general or otherwise) if it introduces a change to its Search product.' UPX6019 at 365–66. Google's indifference is unsurprising. In 2020, Google conducted a quality degradation study, which showed that it would not lose search product. FOF ¶ 134.")

474. *Id.* at 187.

475. *Id.* at 145–49. In particular, the court found that Bing (which enjoyed 6% of the GSS market benefits significantly when consumers using Windows devices stick with the default Edge browser (which defaults to Bing GSS). In such cases, Bing was the default search engine (80% of searches).

476. *Id.* at 146–49.

477. *Id.* at 147.

478. *Id.*

479. *See* *United States v. Microsoft*, 253 F.3d 34, 61, (D.C. Cir. 2001) (holding "The OEMs cannot practically install a second browser in addition to IE, the court found, in part because '[p]re-installing more than one product in a given category . . . can significantly increase an OEM's support costs, for the redundancy can lead to confusion among novice users."); *United States v. Google*, 747 F. Supp. 3d 1, 148 (D.C. Cir. 2024).

480. *United States v. Google*, 747 F. Supp. 3d. at 99.

481. *See id.* at 160 (noting that the vast majority of queries go through the Google default on browsers).

482. *Cf. id.* (recognizing that "user habit. . . and choice friction creates a powerful default effect. . .").

483. *See id.* at 45, 121 (discussing aspects of behavioral economics).

484. *Id.* at 121.

485. *Id.* at 167.

court found it implausible that Google would agree to share that amount of value with Apple if it was not receiving value in return.⁴⁸⁶ Google itself thought that it would retain only 30% of search queries on iOS (as opposed to MacOS) if Apple chose a different default search engine.⁴⁸⁷ Google had more direct instruments to control defaults on Android devices.⁴⁸⁸ The MADA and revenue sharing contracts ensured that the Google Search widget and the Chrome browser (defaulting to Google search) were preloaded, prominent on the home screen, and faced no competitors when the user opened the box.⁴⁸⁹

Further, the court found that Google's monopolization of search had caused consumer harm (i.e. had harmed advertisers) by degrading the quality of text adverts offered on Google search results.⁴⁹⁰ Degradation happened in two ways.⁴⁹¹ First, search queries resulted in less information being sent over to advertisers, reducing advertisers' ability to fine-tune their advertising strategies.⁴⁹² Second, Google stopped advertisers' ability to opt out of 'keyword matching', meaning advertisers had less control when bidding for sponsored results.⁴⁹³ Google's exclusive agreements also harmed rival search engines, such as Bing.⁴⁹⁴ Such rivals operated worse quality, non-default search engines with lower query traffic, meaning that advertisers routinely capped the amount of money they spent on Bing adverts rather than Google.⁴⁹⁵ In relation to price, Google's monopoly enabled it "to increase text ads prices without any meaningful competitive constraint."⁴⁹⁶ Google's own experiments showed it had a high "stickage" rate which was constant at 50% even where Google adjusted ad prices upwards.⁴⁹⁷ In light of all these harms, innovation also suffered at the hands of Google's monopoly—with the dominant search engine being unrestrained by the risk of consumers leaving for rivals even if Google's GSE deteriorated in quality.⁴⁹⁸ One can also read into the Google decision a further harm (which is not described in those terms by the court) of reduced consumer

486. *Id.* at 167–68 (stating that "[t]he revenue share payments unquestionably have that effect," in reference to allowing Google to keep its monopoly).

487. *Id.* at 46. ("Google understands that switching on mobile is more challenging than on desktop. To illustrate, in 2016 and 2020, Google estimated that if it lost the Safari default placement, it would claw back more search volume on desktop than on mobile. (citation omitted) (Google would recover only 30% on iOS but 70% on MacOS)"; (citation omitted) (same, projecting 60–80% query loss on iOS); (citation omitted) ("User behavior is more heavily influenced by default settings on mobile and tablet[.]"); (citation omitted) ("People are much less likely to change [the] default search engine on mobile.")).

488. *See id.* at 97–98 (noting that "[u]nder the MADA, partner OEMs must preload all 11 GMS [Google] applications onto a new device").

489. *Id.* at 43–48, 98–99 (detailing "choice friction" in findings of fact and noting that OEMs must preload apps on the default home screen).

490. *Id.* at 180.

491. *Id.*

492. *Id.*

493. *Id.*

494. *Id.* at 180–81.

495. *Id.*

496. *Id.* at 178.

497. *Id.*

498. *Id.* at 118.

choice.⁴⁹⁹ In this way, the exclusivity default reduced consumer choice to the extent that “[m]any users do not know that there is a default search engine, what it is, or that it can be changed.”⁵⁰⁰ Google clearly exploited the choice architecture of default and reduction in “choice friction” in order to reduce meaningful consumer agency.⁵⁰¹

Among other counterarguments, the court rejected Google’s attempt to present artificial intelligence as replacing GSS (and rendering it irrelevant) moving forward.⁵⁰² Google sought to downplay its historical advantage in terms of past search queries which train its system,⁵⁰³ and its expansive data stores by emphasizing that today Google is relying less on user data for ranking search results and instead uses clever algorithms.⁵⁰⁴ The natural consequence of this would be that entry barriers relating to historical data collected by Google would fall away and a new entrant could break into the GSS market armed with a good algorithm.⁵⁰⁵ However, the court thought that artificial intelligence was still a nascent technology, all while Google continues to collect, store, and analyze vast quantities of search data, thus undercutting its argument that the entry barriers to GSS have ended.⁵⁰⁶

Interestingly, the court found that revenue share payments, which occur per user over time, had no impact on the price or quality of the channel partner receiving those payments.⁵⁰⁷ Therefore, they concluded that a subsidy to an OEM at the margin did not reduce the price of handsets,⁵⁰⁸ a subsidy to a carri-

499. *See id.* at 45 (discussing “default bias” and explaining that “defaults have a powerful impact on consumer decisions,” that “many users do not know that there is a default search engine, what it is, or that it can be changed,” and that Google’s exclusive default arrangements block rivals from the most effective distribution channels).

500. *Id.*

501. *See id.* at 46, 48 (discussing choice friction and how it applies to Google).

502. *See id.* at 53, 123 (finding that, “[d]espite [] recent advances, AI has not supplanted the traditional ingredients that define general search,” and holding that “the advent of artificial intelligence (AI) has not sufficiently eroded barriers to entry... [and] AI may someday fundamentally alter search, but not anytime soon”; explaining that AI “cannot replace the fundamental building blocks of search, including web crawling, indexing, and ranking”).

503. *See id.* at 51 (stating that “[t]hirteen months of user data acquired by Google is equivalent to over 17 years of data on Bing”).

504. *See id.* (describing RankBrain, DeepRank, RankEmbed, RankBERT, and MUM as “rely[ing] less on user data” and “designed to fill holes in [click] data,” noting transformers let Google “rely on less user data and still improve” rankings, but finding the evidence does not show today’s GSEs depend less on user data overall).

505. *See id.* at 43, 123, 163 (explaining a new entrant would need billions and either obtain massive user data through non-default distribution channels or “develop[] a technology that would make the need for user data far less important,” which is “unlikely to happen anytime soon,” and that AI “cannot replace the fundamental building blocks of search”).

506. *Id.* at 53–54.

507. *See id.* at 176 (“The link between the exclusive agreements and competition in the browser market is weak.”).

508. *See id.* (explaining that “Google has produced little industry evidence from any OEM or carrier that views the Android agreements and their revenue share payments as enhancing competition among devices” and that for Android devices, the picture was less clear-cut but even there the court concluded that the rest of the evidence supporting this purported cross-market benefit comes from Google employees, but that testimony is largely speculative, as they have no first-hand knowledge of how Android partners use the revenue share payments).

er at the margin did not reduce the price of service,⁵⁰⁹ and a subsidy to a browser at the margin did not increase the quality of browsers, and that these were all out of market benefits.⁵¹⁰ The court may not have wanted to grapple with the benefits of Google’s revenue sharing payments because it thought it would then have had to balance harms with benefits. But the court could have avoided balancing by finding that one harm from the conduct was that payments to channel partners were lower than they would have been under competition.

2.4 *The Case Outcomes in Both Jurisdictions*

The competition authorities won all four of the Google cases we consider in this paper.⁵¹¹ The process in the two jurisdictions is quite different in the sense that the European Commission is both the investigator and the judge in the first round of litigation.⁵¹² Thus, the previous section describing the EU Android cases makes conclusions about substance.⁵¹³ The judicial component of the EU cases consists entirely of appeals.⁵¹⁴ In the United States, by contrast, the government only makes a complaint, as described above.⁵¹⁵ The role

509. *See id.* at 175 (explaining that “while the revenue share payments could be said to have subsidized costs to consumers of all services provided by T-Mobile, it would have ‘helped in a very minor way’; (citation omitted) (“Q. Does the fact that the Android operating system license is free help Motorola develop more competitive devices across different price points? A. I think there is not necessarily a direct relationship to that.”). Also, once more, Google has not shown how the agreements’ *exclusivity* is the reason for greater smartphone competition and thus increased search output.”).

510. *See id.* at 174, 176 (stating that “The ISA does not require Apple to use revenue share payments to improve Safari, and Google has presented no evidence that Apple does so. Mozilla likely does use its payments from Google to upgrade Firefox (given that those payments make up 80% of its operating budget), but Firefox’s contribution to the overall search market is so small that the additional output it produces, at most, marginal procompetitive benefits. (citation omitted). Importantly, even if there is a link between more competitive browsers and search output, Google not shown how the *exclusivity* of its agreements has produced that benefit,” and “no evidence shows how Apple uses its revenue share payments, and to the extent Mozilla uses them to improve Firefox, its share of the browser market is so low that it does not move the competitive needle”).

511. *See* Case C-48/22 P, *Google LLC & Alphabet Inc. v. Commission*, ECLI:EU:C:2024:726, ¶ 277 (Sep. 10, 2024) (dismissing Google’s appeal and leaving the Commission’s Shopping decision intact); Case T-604/18, *Google & Alphabet Inc. v. Commission*, ECLI:EU:T:2022:541, ¶ 1116 (Sept. 14, 2022) (largely upholding the Commission’s Android decision; annulling only the RSA element and reducing the fine); *United States v. Google*, 74 F. Supp. 3d 1, 187–88 (D.C. Cir. 2024) (holding Google unlawfully maintained monopolies in general search services and general search text ads).

512. Colomo, *supra* note 3, at 12–16, 18–20; *See* Council Regulation (EC) No 1/2003, art. 7, 2003 O.J. (L 1) 9, 16–17 (empowering the Commission to adopt infringement decisions and to impose fines); *see also Procedures in Article 101 Investigations*, EUR. COMM’N, https://competition-policy.ec.europa.eu/antitrust-and-cartels/procedures/article-101-investigations_en [https://perma.cc/98WY-M53P] (last visited Oct. 2, 2025) (noting Commission “Prohibition Decisions” under art. 7 and that Commission decisions are subject to review by the General Court and the Court of Justice under art. 263 TFEU).

513. *Infra* Part 2.1.

514. *See* Colomo, *supra* note 3, at 143 (discussing the court’s review of the commission’s decision).

515. *See United States v. Google*, 74 F. Supp. at 33 (noting that on Oct. 20, 2020, the Department of Justice, joined by 11 states, commenced the case by filing a complaint).

of the court is thus to create the substantial findings of fact that feed into conclusions of law, and later feed into the remedies phase.⁵¹⁶

The effects of the remedies introduced in Europe are limited.⁵¹⁷ This may be partly because of the complexity of digital markets and their functioning as well as being a first mover in enforcing in digital platforms, but we also find that the need to simply prohibit past behavior significantly limits the effectiveness of EU remedies.⁵¹⁸ A major problem with remedy design in complex markets is the risk of capture or circumvention by the undertaking in question.⁵¹⁹ In both Google cases in the EU, the Commission allowed Google to co-design the imposed remedies aimed at ending the infringement.⁵²⁰ Finding effective remedies in digital markets likely warrants the end of this principles-based remedy procedure, where undertakings are allowed to adopt their own compliance mechanism.⁵²¹

In the EU, the Digital Markets Act has been adopted as a means to fill the remedy gap faced in competition law enforcement.⁵²² This falls within the tradition of EU law, where markets with structural competition problems are often regulated by specific rules, rather than through competition law.⁵²³ However, this does not mean that antitrust laws are unable to resolve competition issues in digital markets altogether.⁵²⁴ The next section explores why US anti-trust authorities are better positioned to design and impose effective remedies.

516. See *id.* (explaining that the opinion sets out findings of fact and conclusions of law).

517. See Colomo, *supra* note 3, at 138 (stating that remedies are hard to craft and that controversy around the *Google Shopping* case remains).

518. *Id.* at 138. See Eur. Comm’n, *Commission Staff Working Document—Impact Assessment Accompanying the DMA Proposal*, at ¶¶ 13–17, 257, SWD(2020) 363 final, (Dec. 15, 2020) (identifying the “particular features of digital markets” and noting concerns that ex post enforcement has “not been effective enough... in a timely manner”).

519. Colomo, *supra* note 3, at 146. See *Merger Remedies: Guidance* (CMA87) 52–53 59, COMPETITION & MKTS. AUTH. (Dec. 2018), https://assets.publishing.service.gov.uk/media/5c12349c40f0b60bbe0d7be/Merger_remedies_guidance.pdf [<https://perma.cc/M6SK-UW94>] (warning of “circumvention risk” in behavioral remedies and noting that firms with market power may “readily evolve new forms of behavior to replace restricted conduct”).

520. See Report on Competition Policy 2017, SWD (2018) 349 final, EUR. COMM’N, Commission Staff Working Document, at 58–59 (June 18, 2018) (“It is Google’s sole responsibility to ensure compliance, and the Commission is monitoring Google’s compliance closely.”); *Europ and Google: At a Crossroads*, BALANCED ECON. PROJECT (Sept. 11, 2025), <https://thecounterbalance.substack.com/p/europe-and-google-at-a-crossroads> [<https://perma.cc/GBK8-LBFE>] (explaining that Google was allowed to design its own remedies).

521. Colomo, *supra* note 3, at 140.

522. *Id.* at 158–59; Council Regulation 2022/1925, 2022 O.J. (L 265) 3 (EU) (stating the Regulation “aims to complement the enforcement of competition law” and pursues an objective “complementary to, but different from” protecting undistorted competition).

523. See PABLO IBÁÑEZ COLOMO, *THE NEW EU COMPETITION LAW*, 100 (2024) (explaining the EU’s long-standing practice of addressing structural market problems through sector-specific, ex ante regulation alongside competition law); Colomo, *supra* note 3, at 137, 158–59 (arguing that “regulatory-like” intervention is necessary in digital markets, consistent with the EU tradition of sector-specific rules complementing competition law).

524. Colomo, *supra* note 3, at 158–59. See *United States v. Google*, 747 F. Supp. 3d 1, 187–88 (D.C. Cir. 2024) (holding Google unlawfully maintained monopolies in general search services and general search text ads); *United States v. Google*, 778 F. Supp. 3d 797, 810 (E.D. Va. 2025) (finding Google liable for monopolizing publisher ad server and ad exchange markets and for unlawful tying).

3. *Towards Better Remedies: Implications for the Remedies in the US Search Case*

This section discusses the proposed remedies of the Department of Justice, lessons from European enforcement and remedy design, and proposes further steps in the imposition of remedies in the US.

3.1. *A Smorgasbord of Remedies*

The Department of Justice request for relief provides an overview of the interventions that are available.⁵²⁵ Unlike the EU, where the remedies are focused on—and generally limited to—ending the abuse of dominance in question, the DOJ’s request for relief proposes ways to end Google’s monopoly in horizontal search, to “pry open the monopolized market to competition”, to remove barriers to entry, and ensure that no practices remain that are likely to result in unlawful monopolization.⁵²⁶ To achieve this, the DOJ filed a brief containing a comprehensive menu of options from which the judge can choose.⁵²⁷ The breadth of the options the DOJ put forward is an example of how expansive the US remedy procedure is and how remedies need not be confined to narrowly ending the anticompetitive acts.⁵²⁸ Some of the DOJ’s options are complementary, while others are substitutes for one another.⁵²⁹ While these are only the remedies proposed by the DOJ, it remains to be seen what the court will adopt, they are nonetheless instructive.⁵³⁰ We briefly review them here:

A. *Prohibiting preferential treatment and payments*

The government proposed that Google be prohibited from offering anything of value to a third party that may create an economic disincentive against competition in the general search engine (GSE) or advertising market.⁵³¹ This would include payments for preferential treatment of the Google GSE, making the GSE the default within new or existing search access points, or the pre-installation, placement, of default status for any search access points.⁵³² The DOJ’s brief gives the following examples

525. Amended Complaint at 57, *United States v. Google*, 747 F. Supp. 3d 1 (D.C. Cir. Jan. 15, 2021) (requesting “structural relief,” conduct injunctions, and other relief “necessary and appropriate to restore competitive conditions”).

526. Executive Summary of Plaintiffs’ Initial Proposed Final Judgment at 6, 9, 11–12, *United States v. Google*, 747 F. Supp. 3d 1 (D.C. Cir. Nov. 20, 2024), ECF No. 1062-1.

527. Plaintiffs’ Remedies Pre-Trial Brief at 3–14, *United States v. Google*, 747 F. Supp. 3d 1 (D.C. Cir. Apr. 16, 2025), ECF No. 1218.

528. *Id.* at 2–4.

529. *Id.* at 4–14.

530. *Id.*

531. Plaintiffs’ Revised Proposed Final Judgment at 10, *United States v. Google*, 747 F. Supp. 3d 1 (D.C. Cir. Mar. 7, 2025), ECF No. 1184-1.

532. *Id.* at 7–8.

- Google cannot enter into placement agreements with Apple⁵³³
- Google cannot enter into exclusivity agreements with publishers⁵³⁴
- Google cannot make access to the Play Store conditional on distribution agreements for GSE⁵³⁵
- Google cannot enter into revenue sharing agreements at all⁵³⁶
- Google cannot make investments, holding, or any interest in any competitor that competes in the area of search, search ad text, or any AI product.⁵³⁷ Google must divest any interest it has in such a firm and report in writing their efforts to do so until the end of the Final Judgement⁵³⁸
- Google may not acquire any firm or start a joint venture with a competitor active in GSE or AI or Search Text Ads absent written consent.⁵³⁹
- Google should not circumvent these clauses.⁵⁴⁰

B. Divestitures

The DOJ proposed a divestiture of Chrome⁵⁴¹ and a conditional divestiture of Android⁵⁴² to enable entry of new search competitors. A competing search engine could pay for inclusion in Chrome and obtain distribution through that popular channel.⁵⁴³ Combined with the contractual freedom above, an OEM could then preinstall the version of Chrome containing the rival search engine and not fear that its Android license would be revoked.⁵⁴⁴ Because Google uses Chrome to harvest personal data and track user browsing across the internet, a divestiture of Chrome would have significant impact on the relative value of ads sold by Google vis-a-vis competitors in the digital advertising market.⁵⁴⁵

533. *Id.* at 8.

534. *Id.* at 8.

535. *Id.* at 8–9

536. *Id.* at 9.

537. *Id.* at 10

538. *Id.* at 36.

539. *Id.* at 10.

540. *Id.* at 11–12.

541. *Id.* at 12–13.

542. *Id.* at 14.

543. See generally *id.* (mandating divestiture); *Department of Justice Wins Significant Remedies Against Google* (Sept. 2, 2025), DEP'T JUST. (Sept. 2, 2025), <https://www.justice.gov/opa/pr/departement-justice-wins-significant-remedies-against-google> [<https://perma.cc/Y9UC-SD7L>].

544. Plaintiffs' Revised Proposed Final Judgment, *supra* note 543, at 13.

545. See Deepak Ravichandran & Nitish Korula, *Effect of Disabling Third-Party Cookies on Publisher Revenue*, GOOGLE 1 (Aug. 27, 2019), https://services.google.com/fh/files/misc/disabling_third-party_cookies_publisher_revenue.pdf [<https://perma.cc/56U7-9P6W>] (stating that disabling cookies decreases average publisher revenue by 52%); Paresh Dave, *Google Selling Chrome Won't Be Enough to End Its Search Monopoly*, WIRED (Nov. 20, 2024), <https://www.wired.com/story/doj-google-chrome-antitrust> [<https://perma.cc/S5WN-L94T>] (noting advertisers depend on users clicking their ads); *How Google uses information from sites or apps that use our services*, GOOGLE, <https://policies.google.com/technologies/partner-sites?hl=en-US> [<https://perma.cc/A2JG-KT8C>] (discussing how Google user data is used in advertising) (last visited Sep. 20, 2025).

The DOJ's request for an Android divestiture is contingent on the first round of remedies failing to restore the lost competition.⁵⁴⁶ If the court finds that the chosen remedies do not end the monopoly within five years, the court could require the divestiture of Android in order to free OEMs to be able to contract with search rivals.⁵⁴⁷ Such a flexible remedy order can be particularly useful in creating an incentive for the defendant to comply with the remedy ordered by the court.⁵⁴⁸

To further ensure that Google cannot re-monopolize the search markets, the DOJ also proposes a general prohibition of self-preferencing.⁵⁴⁹ Apart from judicial exceptions in the order, Google is forbidden to “use any Google-owned or operated asset...to preference Google’s GSE, Search Text Ads, or AI Products”.⁵⁵⁰ This includes lessening in any way the ability of users to find a rival GSE or new search text ad, limit the competitive capabilities of competitors in this area, or use any other ways to undermine competition in this area.⁵⁵¹ Obviously, such a provision is difficult to enforce, which leads the DOJ to propose a technical committee, as described below.⁵⁵²

C. *Data-related Obligations*

The request for relief includes a requirement to disclose scale-dependent data necessary to compete with Google.⁵⁵³ The end-user data to be shared includes everything that Google itself chooses to keep.⁵⁵⁴ If personal data are too sensitive for Google to use and store, then they do not need to be shared with rivals.⁵⁵⁵ Google must also give access to its web index in real time at marginal cost.⁵⁵⁶ Google must also allow publishers to opt-out of any data-collection or combinations for the training of AI and development of AI products.⁵⁵⁷

D. *Syndication of Search Results*

To level the playing field between Google and competitors, Google may also be required to offer a temporary syndication license for its search results

546. Plaintiffs’ Revised Proposed Final Judgment at 14, *United States v. Google LLC*, 747 F. Supp. 3d 1 (D. C. Cir. Mar. 7, 2025), ECF No. 1184-1.

547. *See* Plaintiff’s Initial Proposed Final Judgment at 11, *United States v. Google*, 747 F. Supp. 3d 1 (D.C. Cir. Nov. 20, 2024) (providing that if the remedies are insufficient, the Court may order additional relief, and that Google shall divest Android if “either or both monopolized markets have not experienced a substantial increase in competition in 5 years”).

548. *See id.* (explaining the remedy for Google to comply with to fix its monopolistic advantage).

549. *See id.* at 10.

550. *Id.*

551. *Id.*

552. *See id.* at 22–27 (explaining the technical committee).

553. *Id.* at 11–14.

554. *Id.* at 13.

555. *Id.* at 14.

556. *Id.* at 12.

557. *Id.* at 12–13.

and search advertising services to rival search engines.⁵⁵⁸ These syndication licenses would last up to 10 years and must be offered to any qualified competitor on a non-discriminatory basis.⁵⁵⁹ The syndication licenses would grant the third-party access to the ranking and sorting technology of Google in search and its ad-serving technologies in the advertising markets.⁵⁶⁰ Rivals could then sell search results using their own user interface and monetization model.⁵⁶¹

E. Search and Ad Transparency

The DOJ requests a number of transparency measures which include reports related to search queries, data, and changes to ad auctions.⁵⁶² Google must also make available keyword matching options.⁵⁶³ These transparency measures may help publishers and advertisers to better understand their performance and independently verify their inventory, allowing them to better determine if they would prefer to use services offered by competitors.⁵⁶⁴ This should reduce switching costs, opening up access to business users for competing search ad providers.⁵⁶⁵

F. Monitoring

The imposed obligations will be monitored by a technical committee.⁵⁶⁶ The judge should appoint a five-person technical committee to assist in enforcement and compliance.⁵⁶⁷ The members “must be experts in some combination of software engineering, information retrieval, artificial intelligence, economics, and behavioral science.”⁵⁶⁸ The Committee will receive a number of powers and obligations to monitor and enforce, including the setting of rules and to collect information.⁵⁶⁹ Google itself must appoint an internal compliance officer, who will investigate complaints and communicate with the technical committee.⁵⁷⁰ Furthermore, Google will be subjected to compliance inspections, anti-retaliation, and anti-circumvention measures.⁵⁷¹ Finally, third parties may submit requests for voluntary dispute resolution to Google, which

558. *Id.* at 14–18.

559. *Id.* at 14–15.

560. *Id.*

561. *See id.* at 15 (“Google may not place any conditions on how any licensee may use syndicated content...”).

562. *Id.* at 18–19.

563. *Id.*

564. *Id.* at 18–19.

565. *See id.* (aiming to reduce barriers to entry and pry open the markets to competition).

566. *Id.* at 22.

567. *Id.*

568. *Id.*

569. *Id.* at 25.

570. *Id.* at 27–29.

571. *Id.* at 30–32.

is then overseen by the compliance officer and if needed the technical committee.⁵⁷²

3.2 *Lessons from Europe: the Design of Cases and Finding Adequate Remedies*

A. *Overlaps and Omissions*

An ideal investigation into Google's behavior would start from the search market and work its way outward through the value chain and ecosystem. Google achieved monopolization of search through a constellation of behaviors: the exclusive agreement with Apple, agreements with Android OEMs that blocked entry of rival operating systems, browsers, and search engines, and the design and tie of the Play Store.⁵⁷³ Neither Google's agreements with OEMs that use Android and Apple nor those with other channel partners should be viewed separately from the strategy of using search to disadvantage vertical search competitors.⁵⁷⁴ Links to anticompetitive behavior in other markets may be indirect, yet also reinforce the search monopoly: Google's default installation of the Play Store, the prominent placement of rivals' markets, obtaining advantageous data through a tied Chrome browser, and careful design of defaults and choice architecture.⁵⁷⁵ Neither the U.S. nor EU case contains all of these elements.⁵⁷⁶

The EU case seems to attribute Google's monopoly in search to market forces and structural characteristics, combined with the contractual tying of Android and its proprietary apps and services with OEMs.⁵⁷⁷ This story neglects the agreement with Apple.⁵⁷⁸ This agreement, which pre-empted a major potential competitor from investing in its own horizontal search engine, is simply not in the scope of the investigation or the Commission's analysis, even though this agreement covers the other half of the duopoly market for mobile-based search.⁵⁷⁹

In the U.S., on the other hand, the search monopoly is attributed to Google's contracts with Apple and the relevant agreements with Android-based OEMs deployed in an environment with network effects and default ef-

572. *Id.* at 29–30.

573. *See id.* (listing series of behaviors Google engaged in leading to its monopolistic market position).

574. *See id.* (listing series of behaviors Google engaged in as a whole).

575. *See id.* (listing series of behaviors Google engaged in leading to its monopolistic market position).

576. *See id.* (focusing on Search); Case T-604/18, *Google and Alphabet v. Commission* (Google Android), ECLI:EU:T:2022:541 (Sept. 14, 2022); Case C-48/22 P, *Google and Alphabet v. Commission* (Google Shopping), ECLI:EU:C:2024:14 (Jan. 11, 2024) (discussing some but not all the elements in the cases).

577. *See* Case T-604/18, *Google and Alphabet v. Commission* (Google Android), ECLI:EU:T:2022:541, ¶¶ 828–65 (Sept. 14, 2022) (imposing restrictions on Google marketing and structure).

578. *See id.* at ¶ 154 (rejecting arguments that Apple's iOS was a competitive constraint on Google and Android).

579. Commission Decision Case AT.40099 of 18 July 2018,—*Google Android*, ¶¶ 242-243, 322-327 (defining relevant markets and noting Apple's non-licensable OS is not in the licensable OS market).

fects.⁵⁸⁰ The importance of vertical, or specialized, search as both a current and nascent competitor was dismissed by the court.⁵⁸¹ Including those competitors would have usefully incorporated the main theme of the EU *Shopping* case.⁵⁸² Many aspects of the Android ecosystem that were used to create and maintain Google's market power are not separately enumerated conduct in the US litigation.⁵⁸³ Again, inclusion of more Android conduct would have usefully built on the EU *Android* case.

Finally, a closer look at the EU's Google Android and Google Shopping cases reveals that the Commission is trying to develop two separate remedies based on two separate theories of harm without being able to use the close connection between them: leveraging from upstream markets (Android) into search and leveraging search into downstream markets (Shopping).⁵⁸⁴ This bifurcation led to two separate remedies.⁵⁸⁵ It is the fragmented view on markets, behaviors, effects, and timelines that prevents competition authorities from capturing the whole story to craft an effective remedy.⁵⁸⁶

B. Comparison with Europe

The US request for relief presents an opportunity to learn from and go beyond what is mandated in Europe, both in terms of antitrust and regulation.⁵⁸⁷ Not only can the DOJ exceed the antitrust remedies that proved ineffective in Europe, it can also choose remedies that are stronger than those in the Digital Markets Act such as: free access to certain categories of data, syndication licenses, divestitures, and the prohibition of revenue sharing agreements are new options in remedying Google's monopoly.⁵⁸⁸

The Digital Markets Act is important for the court to consider because it uses regulation to constrain Google's search monopoly by increasing contesta-

580. United States v. Google, 747 F. Supp. 3d 1, 146–52 (D.C. Cir. 2024), note 547.

581. See *id.* at 107–88 (relying on other grounds for the court's conclusion).

582. See Case C-48/22 P, Google and Alphabet v. Commission (Google Shopping), ECLI:EU:C:2024:14, ¶ 170 (emphasizing how Google demoted rivals through its vertical search function).

583. See Plaintiff's Initial Proposed Final Judgment, United States v. Google, 747 F. Supp. 3d 1 (D.C. Cir. Nov. 20, 2024) (listing series of behaviors Google engaged in leading to its monopolistic market position, focused on search, not Android); United States v. Google, 747 F. Supp. 3d at 187–88 (finding Google violated the Sherman Act regarding general search services and general text advertising).

584. Case C-48/22, Google and Alphabet v. Commission (Google Shopping), ECLI:EU:C:2024:14, ¶ 66 (Jan. 11, 2024); Case T-604/18, Google and Alphabet v. Commission (Google Android), ECLI:EU:T:2022:541, ¶ 537 (Sept. 14, 2022).

585. Case C-48/22, Google and Alphabet v. Commission (Google Shopping), ECLI:EU:C:2024:14, ¶ 28, 206 (Jan. 11, 2024); Case T-604/18, Google and Alphabet v. Commission (Google Android) ECLI:EU:T:2022:541, ¶ 1113 (Sept. 14, 2022).

586. Ioannis Lianos, *Polycentric Competition Law*, UCL CTR. FOR L., ECON., & SOC. 18 (Apr. 2023), <https://ssrn.com/abstract=3257296> [<https://perma.cc/GE9R-XENG>].

587. See Fiona M. Scott Morton et. al., *Judicial Remedies to Restore Competition in the Market for General Search*, YALE TOBIN CTR. FOR ECON. POL'Y 7, 11 (Oct. 14 2024), <https://tobin.yale.edu/research/judicial-remedies-restore-competition-market-general-search> [<https://perma.cc/6LZS-PKEK>] (comparing the U.S. cases to Europe and suggesting that looking at the European experience can help).

588. See Plaintiff's Initial Proposed Final Judgment, *supra* note 547, at 6–18 (naming and explaining these remedies).

bility in several key markets.⁵⁸⁹ The DMA has a number of provisions that either generalize the lessons from the substantive investigations in *Google Shopping* and *Google Android*, or go beyond competition law investigations to impose new principles.⁵⁹⁰

The self-preferencing theory of harm formulated in *Google Shopping* has now been codified in Art. 6(5) of the DMA, which contains a general prohibition for providing ‘preferential treatment’ to the services offered by a regulated gatekeeper in downstream markets.⁵⁹¹ The theories of harm formulated in *Google Android* have been captured in Articles 6(3), 6(4), 6(7), and 6(12) of DMA.⁵⁹² These provisions mandate interoperability, allowing users to uninstall proprietary apps, and to allow FRAND app store access.⁵⁹³ Jointly, these provisions should reduce the control firms like Google and Apple have over their mobile ecosystems.⁵⁹⁴ Article 6(11), which mandates data-sharing for providers of online search on a FRAND basis, aims to open up horizontal search to competition.⁵⁹⁵

The DMA aims to make markets with structural competition issues like online search, operating systems, and app stores, contestable through these ex-ante obligations.⁵⁹⁶ The DMA is limited in its personal and material scope, as it only applies to gatekeepers designated under Art. 3 that operate core platform services defined in Art. 2.⁵⁹⁷ However, the point of such a regulatory intervention is to escape the shortcomings of competition law by imposing a special type of sectoral regulation that promotes ‘contestability’.⁵⁹⁸ Contestability, in the context of the DMA, is the reduction of entry barriers for markets that are otherwise insurmountable due to network effects, economies of scale, and data-driven incumbency advantages.⁵⁹⁹

However, stimulating some level of contestability, if successful, still does not guarantee the end of the search monopoly.⁶⁰⁰ The first year of DMA com-

589. Regulation 2022/1925, of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), 2022 O.J. (L 265) 1, 2–4, 8–12.

590. *Id.*

591. *Id.* at art. 6(5).

592. *Id.* at art. 6.

593. *Id.*

594. *See id.* (aiming to ensure competitive markets).

595. Council Regulation 2022/1925, art. 6(11), 2022 O.J. (L 265) 1, 36.

596. *The Digital Markets Act: Ensuring Fair and Open Digital Markets*, EUR. COMM’N, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/digital-markets-act-ensuring-fair-and-open-digital-markets_en [<https://perma.cc/8XJA-UM7X>] (last visited Sep. 21, 2025).

597. *Id.*; *see also* Commission Regulation 2022/1925, art. 2–3, 2022 O.J. (L 265) 1, 28–32 (defining gatekeepers and core platform services).

598. Jörg Hoffmann, *How to Implement the DMA in Order to Attain its Goals of Contestability and Fair Digital Markets for Core Platform Services*, OXFORD BUS. L. BLOG (July 20, 2023), <https://blogs.law.ox.ac.uk/oblb/blog-post/2023/07/how-implement-dma-order-attain-its-goals-contestability-and-fair-digital> [<https://perma.cc/RFP2-Q3U5>].

599. Commission Regulation 2022/1925, rec. 3, 32, 36, 44 2022 O.J. (L 265) 1, 2, 8–9, 11–12.

600. *See* Bertin Martens, *What Should Be Done About Google’s Quasi-Monopoly in Search? Mandatory Data Sharing Versus AI-Driven Technological Competition*, BRUEGEL 8–9 (July 6, 2023), <https://www>.

pliance has shown that gatekeepers remain lackluster in their efforts to comply, and will attempt to skirt the regulation while litigating the Commission's decisions.⁶⁰¹ After the Commission intervenes with a non-compliance decision, it will still be the prerogative of the gatekeeper to adapt its compliance strategy.⁶⁰² This allows gatekeepers to remain at the wheel throughout these transitions, and offers them opportunities to delay compliance.⁶⁰³

If the U.S. court wants to make a difference in the market for search, it is likely going to need to move beyond the obligations imposed on Google under either Art. 102 of the TFEU or the Digital Markets Act.⁶⁰⁴ For example, if the DOJ's suggestions are implemented, Google would have to give access to both its index and more categories of data than under the DMA, and it must do so at no cost instead of charging a FRAND price as the DMA allows.⁶⁰⁵ Payments by Google to channel partners would be banned, and its web index shared with competitors, neither of which is a remedy in Europe.⁶⁰⁶

3.3 Next Steps and Main Takeaways

A. Assessing the Limitations in Both Enforcement Models

The proposed remedy package by the Department of Justice shows the extent to which it has been able to identify sources of competitive harm and potential solutions on the basis of years of enforcement experience and input from civil society.⁶⁰⁷ The ability to create such a large and varied set of remedies is a strength of the US system.

However, it is possible to squander such an advantage. As a second mover, the US Department of Justice has been able to collect information and study the European experiences in the 14 years between the initial complaint in

bruegel.org/system/files/2023-07/WP%2010.pdf [<https://perma.cc/THU3-WBAD>] (exploring the difficulties of ending search monopolies via contestability).

601. See Alba Ribera Martínez, *Full (Regulatory) Steam Ahead: Gatekeepers Issue the First Wave of DMA Compliance Reports*, KLUWER COMPETITION L. BLOG (Mar. 11, 2024), <https://legablogs.wolterskluwer.com/competition-blog/full-regulatory-steam-ahead-gatekeepers-issue-the-first-wave-of-dma-compliance-reports/> [<https://perma.cc/T8ZB-5XS7>] (noting that the published compliance reports lack enough substantive technical details to determine compliance); van den Boom & Podszun, *supra* note 48 at 9.

602. Martínez, *supra* note 601.

603. van den Boom & Podszun, *supra* note 48, at 7–9.

604. See Baskaran Balasingham & Alessia S. D'Amico, *Beyond Exclusion: Revisiting Exploitative Abuses in Digital Platform Markets*, 13 J. ANTITRUST ENF'T. 265, 268–269 (2025) (explaining the weaknesses of enforcement under Article 102 TFEU).

605. Plaintiffs' Initial Proposed Final Judgment, *supra* note 547, at 13; Martin Duckworth, Peter Davies & Ankit Parasrampur, *Fairness and the Digital Markets Act*, FRONTIER ECON., <https://www.frontier-economics.com/uk/en/news-and-insights/articles/article-i10419-fairness-and-the-digital-markets-act/> [<https://perma.cc/RM73-QFVR>] (last visited Sep. 21, 2025).

606. Plaintiffs' Initial Proposed Final Judgment, *supra* note 547 at 8, 12.

607. See U.S. DEP'T OF JUST. & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR BUS. ACTIVITIES AFFECTING WORKERS I (2025) (explaining how the DOJ and FTC assess business practices); Plaintiffs' Initial Proposed Final Judgment, *supra* note 605 (explaining the purposes of the DOJ remedies and their goal of ending monopoly).

Google Shopping and *Google Android*.⁶⁰⁸ If the court simply imposes the same remedies the Europeans tried, or something very similar, it can expect the same outcome, namely very little change.⁶⁰⁹

In the EU, the design of a case limits the remedies.⁶¹⁰ If a specific conduct is not described by the Commission as anticompetitive and approved as such by the courts, a change to it cannot be included in any future remedy.⁶¹¹ Therefore, the scope of the investigated behavior strictly controls the design of remedies.⁶¹² A “proportionate” remedy is defined as one that goes no further than is required to stop the identified abusive behavior *or* the effects produced as a consequence of that behavior, and these, in the context of a complex monopolization case, are not the same thing.⁶¹³

In the EU *Google Android* case, the absence of the Apple contract in the case meant that the remedy could likewise not include restrictions on that agreement.⁶¹⁴ Similarly, if an investigation focuses on the Android Operating System, remedies involving the Chrome web browser would likely not be permitted.⁶¹⁵ It is this limitation of the design of EU competition law that makes it hard to find remedies that will work to restore competition, particularly when, at the time the investigation is started, it is not yet clear what remedies may be required to actually restart competition or end the monopoly.⁶¹⁶

These limitations are further exacerbated by the “public enforcement” model maintained in Europe.⁶¹⁷ It is the European Commission that must prove, in a way that can be maintained before the Court, that the firm is dominant, that it has abused its dominant position in a way that has distorted competition, that there are no countervailing efficiencies, and that the remedies are

608. Bergqvist, *supra* note 383.

609. *See id.* (describing the flaws in the EU’s approach and how the DOJ can improve).

610. *See* Christophe Carugati, *How the European Union Can Best Apply the Digital Markets Act*, BRUEGEL (Oct. 4, 2022), <https://www.bruegel.org/blog-post/how-european-union-can-best-apply-digital-markets-act> [<https://perma.cc/L8K9-MA99>] (describing potential weaknesses with the DMA).

611. *See also* Case T-201/04, *Microsoft v.*, 2007 E.C.R. II-03601 at ¶ 1223 (finding the proportionality of the Commission’s remedies was “far from being disproportionate, the remedy prescribed in Article 6(a) of the contested decision is an appropriate means of *putting an end to the abuse in question and of resolving the competition issues identified*, while causing the least possible inconvenience to Microsoft and its business model.” Thus, establishing that the remedy should (a) relate to the abuse and (b) see to the effects on competition identified in the Commission’s case) (emphasis added).

612. *See* Jacques Cremer et al., *Enforcing the Digital Markets Act: Institutional Choices, Compliance, and Antitrust*, Yale Tobin Ctr. for Econ. & Pol’y 5, https://tobin.yale.edu/sites/default/files/2022-12/Enforcing%20the%20Digital%20Markets%20Act_1.pdf [<https://perma.cc/VZF9-BP9V>] (explaining the choice between the DMA and antitrust law).

613. Mandrescu, *supra* note 21, at 363–64; Sullivan, *supra* note 87, at 416–18.

614. *See* Mandrescu, *supra* note 21, at 364 (noting the remedies “must correspond with the nature and scope of harm caused by the abuse of dominance”).

615. *Id.*

616. *Id.*; Decarolis et al., *supra* note 289, at 373.

617. *See* Mandrescu, *supra* note 21, at 358 (giving the basis for public enforcement in the EU); *see also* R. Preston McAfee, Hugo M. Mialon & Sue H. Mialon, *Private v. Public Antitrust Enforcement: A Strategic Analysis*, 92 J. Pub. Econ. 1863, 1864 (2008) (explaining how public enforcement is not as effective a remedy when used alone).

suitable and proportionate.⁶¹⁸ A cautious approach by the competition authority is more likely to yield victory on the question of liability.⁶¹⁹ Widening the scope of an investigation too much, for instance by including Apple and therefore lowering Google's share in mobile operating systems, may thwart a finding of dominance.⁶²⁰ Including too many different behaviors and perceived effects may require market definition and evidence of the impact of each one which makes the case harder to prove for the agency and harder to assess for the court.⁶²¹ But victory on liability provides little reason to celebrate if it is paired with narrow and therefore ineffective remedies. Consumers in the relevant markets are not made better off by the exercise, while taxpayer money was spent on years of litigation.⁶²²

The US model has different limitations. Courts are generally skeptical of intervention due to forty years of Chicago School anti-enforcement rhetoric and jurisprudence, and therefore antitrust plaintiffs generally lose.⁶²³ In addition, the threshold for finding a monopoly is much higher than that for European dominance, typically more than 70% market share.⁶²⁴ On the other hand, if the court finds the defendant liable for monopolization, the judge is able to impose whatever the least intrusive remedies are that will restore the lost competition.⁶²⁵

Critically, in a situation where a monopolist has entrenched market power, there is no match between the conduct that created the monopoly—perhaps a decade or more ago—and the conduct that would restore the lost competi-

618. Richard Whish & David Bailey, *COMPETITION LAW* 180–221 (9th ed. 2018).

619. See Consumer Benefits and Harms: How Best to Distinguish Aggressive, Pro-Consumer Competition from Business Conduct to Attain or Maintain a Monopoly, 71 Fed. Reg. 17872–73 (Apr. 7, 2006) (explaining the benefits of a cautious approach to antitrust regulation).

620. See Mandrescu, *supra* note 21 at 370–71 (discussing the effects of tying platforms together when regulating).

621. See Dennis W. Carlton, *Market Definition: Use and Abuse*, *COMPETITION POL'Y INT'L.*, Apr. 2007, at 19–21 (explaining the weaknesses of market definition); see van den Boom, *supra* note 48, at 13–14 (describing the effects analysis with respect to behaviors).

622. See Andriani Kalintiri, *EU Antitrust Law's Resilience: The Good, The Bad, and the Ugly*, 43 Y.B. Eur. L. 184, 214 (2024) (describing the negative consequences to consumers by the EU approach); Höppner, *supra* note 21 (discussing the ineffectiveness of remedies against Google in *Google Shopping*).

623. Thomas A. Piraino Jr., *Reconciling the Harvard and Chicago Schools: A New Antitrust Approach for the 21st Century*, 82 IND. L. J. 346, 350 (2007). See Mark Glick & Darren Bush, *The Chicago School, the Post-Chicago School, and the New Brandeisian School of Antitrust: Who is Right in Light of Modern Economics?*, 30 GEO. MASON. L. REV. 935, 946 (2023) (noting that the Chicago School led to a more permissive approach to mergers and its anti-enforcement views crept into enforcement agency pronouncements).

624. The European Court of Justice has established the presumption that any firm with over 50% market share is subject to a rebuttable presumption of dominance. Case C-62/86, *AKZO v. Comm'n Eur. Cmty.*, 1989 E.C.R. 1991 I-03359 at ¶ 75. Firms can however be considered dominant even with lower market shares, although dominance is unlikely when the firm's market share is under 40%. See Piraino, *supra* note 623, at 394 n. 219 (noting that 70% is typically the minimum threshold for a monopoly to be found under U.S. law).

625. Remedies and Commitments in Abuse Cases—Contribution from the United States, *ORG. FOR ECON. CO-OP. & DEV.* 3 (Nov. 23, 2022), [https://one.oecd.org/document/DAF/COMP/GF/WD\(2022\)37/en/pdf](https://one.oecd.org/document/DAF/COMP/GF/WD(2022)37/en/pdf) [<https://perma.cc/MCP7-A38T>].

tion.⁶²⁶ Often, of course, there is a tight link, and a court may order a defendant to cease the conduct that is the central complaint in the case.⁶²⁷ However, in a case like Google Search where the defendant has entrenched market power and has shaped the market over years of dominance while technology was changing, other remedies will typically be needed.⁶²⁸ A US court that finds liability has wide latitude to restore competition using tools that did not feature as anti-competitive conduct in the trial.⁶²⁹

B. Procedural Comparison

The transparency in the US trial and remedy procedure is, in our view, a point in favor of the US system. For example, the government has put forward a menu of what it thinks will be useful and effective remedies, framing the problem and solutions the way it prefers.⁶³⁰ Because this is a public document, it establishes the parameters of the discussion and lays the framework for a public debate on the best remedies.⁶³¹ The act of formally proposing a far-reaching remedy breaks the imagination deficit that often characterizes monopolization cases. Too often, stakeholders simply cannot imagine an industry state different from the one they are in, and that limits their ability to ask for it.⁶³² And because US enforcers are not constrained in the way they are in Europe, the list of options can be broad.⁶³³

Google will no doubt argue against the DOJ's remedy proposals and raise questions about whether they are suitable and beneficial.⁶³⁴ Stakeholders, in-

626. See John Kwoka & Spencer Weber Waller, *Fix It or Forget It: A "No-Remedies" Policy for Merger Enforcement*, CPI ANTITRUST CHRON., Aug. 2021, at 6 (discussing the limitations of current antitrust remedies in the context of mergers).

627. Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act: Chapter 9, U.S. DEP'T OF JUST. (Jan. 8, 2024), <https://www.justice.gov/archives/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-9/> [<https://perma.cc/9UN6-ZDBY>].

628. See Geoffrey A. Manne, *A Critical Analysis of the Google Search Antitrust Decision*, INT'L CTR. FOR L. & ECON.30 (Aug. 14, 2024), <https://laweconcenter.org/resources/a-critical-analysis-of-the-google-search-antitrust-decision/> [<https://perma.cc/ZY5U-SSD9>] (describing the difficulty of creating effective remedies in the Google Search case).

629. See *United States v. United Shoe Mach. Corp.*, 391 U.S. 244, 250–51 (1968) (“[I]t is the duty of the court to prescribe relief which will terminate the illegal monopoly, deny to the defendant the fruits of its statutory violation, and ensure that there remain no practices likely to result in monopolization in the future”).

630. See Plaintiffs' Initial Proposed Final Judgment, *supra* note 547, at 6–22 (laying out proposed remedies).

631. *Id.*

632. See *e.g.*, Thomas B. Leary, *Efficiencies and Antitrust: A Story of Ongoing Evolution*, FED. TR. COMM'N (Nov. 8, 2002), <https://www.ftc.gov/news-events/news/speeches/efficiencies-antitrust-story-ongoing-evolution> [<https://perma.cc/9EGU-73AM>] (explaining how traditional antitrust procedures can be).

633. See Maria Coppola & Renato Nazzini, *The European and U.S. Approaches to Antitrust and Tech: Setting the Record Straight—A Reply to Gregory J. Werden and Luke M. Froeb's Antitrust and Tech: Europe and the United States Differ, and It Matters*, COMP. POL. INT'L 7 (May 2020), <https://www.ftc.gov/system/files/attachments/key-speeches-presentations/europe-column-may-2020-full.pdf> [<https://perma.cc/G5DY-Y34J>] (discussing the procedural differences between the EU and the U.S.).

634. Ryan Knappenberger, *Google Exec Warns DOJ Remedies Will Undermine User Trust in Internet Search*, COURTHOUSE NEWS SERV. (May 6, 2025), <https://www.courthousenews.com/google-exec-warns-doj-remedies-will-undermine-user-trust-in-internet-search/> [<https://perma.cc/DD2U-A7QS>]; see also Mlot, *supra*

cluding business users will communicate their needs to the judge, explaining what they need for competition to be restored and for their pro-competitive ideas to become viable.⁶³⁵ Data scientists and researchers can gather data for analysis of remedies and demonstrate their pros and cons.⁶³⁶ And the public and civil society more broadly (including representative organizations and activists) will communicate which remedies may help consumers and democracy.⁶³⁷ All these parties will, in their own contributions, respond to the content and positioning of the others.⁶³⁸ This exchange and amalgamation of views helps to safeguard the democratic element of antitrust decision-making; it involves the public in the process as both contributors and viewers.⁶³⁹ This process, in and of itself, makes it more difficult for the defendant corporation to convince the court of an ineffective remedy.⁶⁴⁰ However, this force has to be set against the general reluctance of courts to intervene in markets, even when the same court has found illegal conduct.⁶⁴¹

This public process of engagement is very different from what happens in Europe.⁶⁴² In the EU, the Commission will develop a set of potential remedies internally.⁶⁴³ It can collect opinions from third parties about what is suitable in developing these remedies, but they remain confidential.⁶⁴⁴ The Commission

note 380 (explaining how an FTC investigation that revealed Google's questionable conduct resulted in Google claiming no fault).

635. Alissa Cooper, Jason Van den Boom & Zander Arnao, *Designing Google Search Antitrust Remedies To Ignite Competition*, PROMARKET (Nov. 20, 2024), <https://www.promarket.org/2024/11/20/designing-google-search-antitrust-remedies-to-ignite-competition/> [<https://perma.cc/C27W-C5XE>]; Gabriel Weinberg, *Creating Enduring Competition in the Search Market*, DUCKDUCKGO (Sep. 12, 2024), <https://spreadprivacy.com/creating-enduring-competition-in-the-search-market/> [<https://perma.cc/7ZXP-V23V>].

636. Cf. Brief of Behavioral Economists George Loewenstein, Klaus M. Schmidt, and Paul Heidhues As *Amici Curiae* In Support Of Plaintiffs, *U.S. v. Google*, 747 F. Supp. 3d 1 (D.C. Cir. Feb. 17, 2023), at 6–8 (discussing how courts rely on consumer behavior research); Hunt Allcott, Matthew Gentzkow & Lena Song, *Digital Addiction*, 112 AM. ECON. REV. 2424, 2426 (2022) (relying on empirical data to draw conclusions surrounding digital technology); Francesco Decarolis, et al., *Competition and Defaults in Online Search*, 17 AM. ECON. J.: MICROECONOMICS 369, 369 (2025) (conducting a quantitative assessment of interventions curated to mitigate Google's monopoly); Omar Vasquez Duque, *Active Choice vs. Inertia? An Exploratory Assessment of the European Microsoft Case's Choice Screen*, 19 J. COMPETITION L. & ECON. 60, 61–62 (2023) (relying on an empirical analysis).

637. See e.g., Daniel A. Crane, *Antitrust as an Instrument of Democracy*, 72 DUKE L.J. ONLINE 21, 24 (2022) (exploring antitrust as a tool for democracy).

638. See *id.* at 28 (describing how antitrust and democracy rely on communication between parties); see e.g., Decarolis, Li & Paternollo, *supra* note 636, at 371 (responding to arguments from other scholars and building upon them).

639. Crane, *supra* note 637, at 28.

640. See, e.g., Edward D. Cavanagh, *Antitrust Remedies Revisited*, 84 OR. L. REV. 147, 193 (2005) (giving an example of this principle by looking at the Microsoft case).

641. See Erik Hovenkamp, *The Antitrust Duty to Deal in the Age of Big Tech*, 131 YALE L.J. 1483, 1487–88 (2022) (explaining how courts are less likely to side with plaintiffs); see Mullins, *supra* note 380 (finding that the FTC concluded that Google used anticompetitive tactics, abused its monopoly power, and harmed consumers and competitors yet ended the investigation into Google's practices).

642. See Coppola & Nazzini, *supra* note 633, at 7 (comparing the European and U.S. systems).

643. Council Regulation 1/2003, art. 7, 2002 O.J. (L 1) 1, 9.

644. See *Competition Policy: Access to File*, EUR. COMM'N, https://competition-policy.ec.europa.eu/index/access-file_en [<https://perma.cc/U928-APHE>] (last visited Sep. 22, 2025) (explaining the Commission's confidentiality policy; internal documents of the Commission are kept confidential).

may market test some of their proposals, but there is no mechanism for the public to learn about any remedy idea that the Commission chooses not to test.⁶⁴⁵ Moreover, the civil society debate is less vigorous and there is less incentive to make firm conclusions because there is no certainty about the range of options.⁶⁴⁶

C. A Second-mover Advantage: Complementarities in EU and US Antitrust Enforcement

The analysis of the EU and US cases shows how the competition regimes authorities complement one another and how investigations in one jurisdiction may support the other.⁶⁴⁷ The rapid evolution of technology markets resulted in very little time between Microsoft's last class action monopolization case and Google's first monopolization case;⁶⁴⁸ a new market and a new monopolist had arrived much faster than it did when the monopoly transition was between IBM and Microsoft.⁶⁴⁹ This speed was unfamiliar to the competition community and cognitively difficult.⁶⁵⁰

In the EU, where there is less resistance to the idea that monopolists need to be overseen, there was a willingness to follow the facts put forward by observers who were closely studying these markets.⁶⁵¹ When the Commission investigated Google in the 2000s, it found a problem.⁶⁵² The non-confidential versions of the *Google Shopping* and *Google Android* decisions were 216 and 328 pages respectively, and this is only a summary of the extensive analysis conducted by the Commission over the course of years.⁶⁵³ The FTC's attempts to file a complaint against Google in 2011–12 proved unsuccessful as, at that stage, it was still difficult to convince decision-makers in Washington that a company they were accustomed to thinking of as a fantastic innovator was instead a problem.⁶⁵⁴

The Commission, in principle, is better placed than a US authority to bring a new theory of harm because it is a decision-maker as well as a prosecu-

645. Bostoen & van Wamel, *supra* note 188 at 10.

646. *See id.* (explaining how “antitrust remedies are not subject to market testing and feedback from third parties”).

647. Colomo, *supra* note 183, at 229.

648. Kathleen Baydala, *Microsoft Settles Suit with Mississippi for \$100 Million*, REUTERS (Jun. 12, 2009, 2:08 AM), <https://www.reuters.com/article/technology/microsoft-settles-suit-with-mississippi-for-100-million-idUSTRE55A778/> [<https://perma.cc/B88Q-WDCX>]; Travis Clark, *A timeline of how Google became an ad tech monopolist*, THE CURRENT (Apr. 24, 2025), <https://www.thecurrent.com/data-privacy-how-google-became-an-ad-tech-monopolist> [<https://perma.cc/3T8G-7D3M>].

649. Benedict Evans, *How to lose a monopoly*, BENEDICT EVANS (Jan. 1, 2020), <https://www.benevans.com/benedictevans/2020/01/01/microsoft-monopoly-and-dominance> [<https://perma.cc/734R-QDJQ>].

650. Clark, *supra* note 648.

651. Brad Stone, *Sure, It's Big. But Is That Bad?*, N.Y. TIMES (May 22, 2010), <https://www.nytimes.com/2010/05/23/technology/23goog.html/> [<https://perma.cc/9WMA-ZKJ2>].

652. Commission Decision Case AT.39740, of 27 June 2017, *Google Search (Shopping)*.

653. *Id.*; Commission Decision Case AT.40099 of 18 Jul. 2018, *Google Android*.

654. Leah Nylen, *How Washington fumbled the future*, POLITICO (Mar. 16, 2021, 4:30 AM), <https://www.politico.com/news/2021/03/16/google-files-ftc-antitrust-investigation-475573> [<https://perma.cc/377X-ZQED>].

tor.⁶⁵⁵ The European Courts simply assess whether the Commission has sufficiently supported its conclusions but do not carry out a *de novo* investigation.⁶⁵⁶ If the new theory of harm is well supported, it should be upheld.⁶⁵⁷ This is a very different role compared to the US court which is an arbiter between the two parties.⁶⁵⁸ If the Commission is much better positioned to explore the anti-competitive effect of conduct in new markets, it is a natural first mover.⁶⁵⁹

However, the European Commission cannot perform as well in the remedy stage. We see this in the Google case clearly.⁶⁶⁰ The Commission was limited by the design of its case and the legal space granted to it under Reg. 1/2003 and was not well positioned to impose proactive remedies that would dismantle entrenched monopoly.⁶⁶¹ Secondly, it gave the defendant a large role in determining the design of remedies and Google could frustrate their effect by taking advantage of consumers' behavioral biases.⁶⁶² As the chosen remedies did not produce significant results, the effort put into the fact-finding venture may have been wasted.⁶⁶³

Here, however, US antitrust enforcement can be helpful—at least in settings where the company and the conduct is largely global and the court is determined.⁶⁶⁴ When the EU has done the work of establishing anticompetitive conduct and socializing concepts such as novel markets and novel business models, US authorities face lower barriers to action.⁶⁶⁵ US authorities could rely on concepts and fact-finding conducted in the EU (and other jurisdictions) all of which demonstrated the strength of the case before the court and civil so-

655. See Bostoen, *supra* note 186 at 14 (describing the Commission's ability to investigate and make decisions regarding remedies).

656. Robert Foyle, *Commission's Discretion, Court's Self-restraint. On the EU Court's Approach to Reviewing Fines in Competition Cases*, CELIS INST. (Jun. 21, 2024), <https://www.celis.institute/celis-blog/commissions-discretion-courts-self-restraint-on-the-eu-courts-approach-to-reviewing-fines-in-competition-cases/#:~:text=Article%20TFEU%20empowers%20the,one%20issued%20by%20the%20Commission> [<https://perma.cc/522Q-3J8P>].

657. Heike Schweitzer, *The European Competition Law Enforcement System and the Evolution of Judicial Review*, in EUROPEAN COMPETITION LAW ANNUAL 2009: THE EVALUATION OF EVIDENCE AND ITS JUDICIAL REVIEW IN COMPETITION CASES 79-146, (Claus-Dieter Ehlermann & Mel Marquis ed., 2011).

658. *Rule of reason and the Supreme Court*, EBSCO, <https://www.ebsco.com/research-starters/law/rule-reason-and-supreme-court> [<https://perma.cc/48DB-PZ72>] (last visited Sept. 22, 2025).

659. See Bostoen, *supra* note 186 at 12 (describing how the DMA empowers the Commission to better respond to issues of first impression).

660. Commission Decision Case AT.39740, of 27 June 2017, *Google Search (Shopping)*, 27.

661. See generally Council Regulation (EC) No. 1/2003, 2002 O.J. (1/1) (providing limited ability to respond to entrenched monopolies).

662. Commission Decision Case AT.39740, of 27 Jun, 2017, *Google Search (Shopping)*, at 27.

663. See e.g., *Open Letter to European Commission: Request for Trilateral Meeting among Google, the EC, and Alternative Search Engines to Improve Search Preference Menu*, SPREADPRIVACY.COM, (Oct. 27, 2020), <https://spreadprivacy.com/trilateral-search-meeting/>, [<https://perma.cc/57DN-8XLG>] (explaining how the Google remedy did not achieve its goals).

664. See Colomo, *supra* note 183, at 227 (explaining a reliance on U.S. antitrust law).

665. Paul Friederisick, *EU and US Antitrust is Converging on Anti-Monopoly*, PROMARKET (Jun. 18, 2025), <https://www.promarket.org/2025/06/18/eu-and-us-antitrust-is-converging-on-anti-monopoly/#:~:text=That%20being%20said%2C%20differences%20in,flexible%20responses%20from%20the%20EU.> [<https://perma.cc/ELP5-AQSE>].

ciety.⁶⁶⁶ If the US authority is then able to convince the court of liability, it can design effective remedies aimed at ending the monopoly.⁶⁶⁷ Because of their stronger tools and breadth of action, US authorities can, in principle, impose remedies with decisive impact that improve on those required in the EU.⁶⁶⁸

In the best-case scenario, the remedies that have proven ineffective following EU proceedings may set a benchmark for the minimum level of intervention that is necessary to produce a meaningful impact on competition. For example, it is now abundantly clear that choice screens and tweaks to licensing or ranking practices are insufficient to restore competition.⁶⁶⁹ This allows the US antitrust authority to use these remedies as a starting point to argue what else may be needed and informs the US court about what is warranted in terms of remedy selection.

D. Synergies Across the Atlantic: A One-Way Street?

Our analysis has established that US competition authorities can rely on lessons from Europe to overcome hurdles in the enforcement of Section 2 of the Sherman Act, as long as the EU acts as a first mover.⁶⁷⁰ There is however no indication that these beneficial effects are bidirectional: there is no increase in the effectiveness of the European Commission if the US antitrust authorities act as a first mover.⁶⁷¹ While US interventions may benefit European markets by ending the monopoly, if EU competition authorities are limited in their ability to impose effective remedies, this makes Europe redundant.⁶⁷² And any case that is specific to Europe, or where conduct is specific to Europe, cannot benefit from any US first mover activity.

Consider the Microsoft cases in the late 90s and early 2000s.⁶⁷³ Here, the Department of Justice acted as a first mover, finding that Microsoft had engaged in monopolization by its foreclosure of Netscape.⁶⁷⁴ Despite establishing the monopoly, the Department of Justice settled the case and enacted behavioral remedies, rather than structural remedies as it proposed earlier.⁶⁷⁵ This meant that Microsoft's monopoly remained (largely) intact.⁶⁷⁶

666. *Id.*

667. *Id.*

668. *See id.* (describing how U.S. antitrust law allows for structural remedies aimed at breaking up monopolies).

669. *See* SPREADPRIVACY.COM, *supra* note 663 (stating that the remedies in Google Shopping were ineffective).

670. *See supra*, Section 2.3(A) (describing the U.S. antitrust action against Google ten years after the EU antitrust action).

671. Friederiszick, *supra* note 665.

672. *Id.*

673. *United States of America v. Microsoft*, 253 F.3d 34, 51 (D.C. Cir. 2001).

674. *Id.*

675. *The Microsoft Settlement: A Look to the Future: Hearing Before the Comm. On the Judiciary*, 107th Cong. 68 (2001) (statement of Dr. Mark N. Cooper, Director of Research, Consumer Federation of America).

676. *Id.*

The European Commission followed the US Department of Justice with two cases against Microsoft.⁶⁷⁷ The first case in 2004 related to the tying of Windows Media Player with Microsoft Windows and a lack of interoperability in Work Group Servers, the second case in 2009 investigated the same behavior as the US investigation in 2001.⁶⁷⁸ In the 2004 case, the European Commission imposed an obligation on Microsoft to offer a version of Windows without Windows Media Player and to make available interoperability information for workgroup servers, in the 2009 case the European Commission accepted commitments which required Microsoft to offer a browser choice screen.⁶⁷⁹ In 2013, the Commission found that Microsoft had not adhered to the conditions set out in the commitment decision, fining Microsoft €561 million.⁶⁸⁰ Thus, despite acting as a second-mover and having the ability to observe why the remedies in the US were perceived to fall short, the European Commission still did not impose further-reaching remedies.⁶⁸¹ Even worse, it still took another four years to issue the decision that Microsoft was ignoring the remedy orders and not offering the choice screen to its users at all.⁶⁸² By the time these remedies were imposed and implemented, Google was already strong enough to be engaging in anticompetitive conduct and the next cycle was underway.⁶⁸³

4. Conclusions

The purpose of this article is to draw lessons from the EU's experiences in imposing remedies against Google to bolster the enforcement of US antitrust. It started by looking at the goals of antitrust enforcement and remedies in both the EU and the US. Here, we found that for EU competition law, the purpose of antitrust enforcement is to bring an infringement to an end and to sanction the investigated undertaking.⁶⁸⁴ For the latter, the European Commission relies heavily on fines to create a deterring effect for future infringements.⁶⁸⁵ In the US, the purpose of antitrust enforcement is to end the monopoly.⁶⁸⁶ This is vastly different from the EU's approach and invites further-reaching remedies.⁶⁸⁷

677. Commission Decision COMP/C-3/39.530, of 16 Dec. 2009, *Microsoft (tying)*; Commission Decision Case COMP/C-3/37.792 of Mar. 24, 2004, *Microsoft*.

678. See Commission Decision COMP/C-3/39.530, of 16 Dec. 2009 at ¶ 1 (tying Internet Explorer to Windows; Commission Decision COMP/C-3/37.792 of 24 Mar. 2004, *Microsoft*, at ¶ 5 (concerning Windows Media Player and Windows operating system).

679. European Commission Press Release IP/09/1941, Antitrust: Commission accepts Microsoft commitments to give users browser choice (Dec. 16, 2009).

680. Commission Decision Case AT.39530 of Jun. 3, 2013 (*Microsoft—tying*), at ¶ 79.

681. See *id.* (noting that the Commission imposed only a fine on Microsoft).

682. *Id.* at ¶ 26.

683. See Commission Decision Case AT.39740, of 27 Jun. 2017, *Google Search (Shopping)*, at 13 (showing that Google quickly monopolized the digital space, leading to complaints).

684. *Supra* Section 1.1(A) (analyzing the weaknesses of EU antitrust enforcement).

685. *Id.*

686. *Supra* Section 1.1(B) (analyzing the more aggressive options available in US antitrust enforcement).

687. *Id.*

We find multiple reasons why remedies have failed in the EU: the design of the *Google Shopping* and *Google Android* cases were suboptimal, leaving important competitive considerations unassessed; the scope of the remedies that the European Commission could introduce was limited and informed by these flawed investigations; the Commission gave too much room to Google to co-design the remedies imposed on it, leading to remedies that were unable to produce a significant impact; and the imposed fines were unable to create sufficient financial incentives to end the infringement or deter Google from repeating the infringement.⁶⁸⁸ Taking these problems together, we find that these issues result from the design of Article 102 of the TFEU and Regulation 1/2003: in entrenched markets, competition cannot be restored by means of a cease-and-desist order.⁶⁸⁹ The competition authority must have the discretion to combat market power directly and have the legal space to impose remedies that restore lost competition and protect the future competitive process. In principle US courts have these powers, but it remains to be seen whether they use them effectively.⁶⁹⁰

While there are synergies when the EU acts as a first-mover and the US acts as a second-mover on the US side, there are no similar benefits for EU enforcement.⁶⁹¹ The EU will have to make amendments to its laws or procedures to make the European Commission better positioned in terms of imposing remedies. Finally, the EU may benefit from increasing transparency in its competition law proceedings, as this creates increased opportunities for stakeholders to participate in both the investigation and designing the remedies.⁶⁹²

688. See Bostoen, *supra* note 186, at 8 (noting that the effectiveness of Google's self-imposed remedies are still debated).

689. See *supra* Section 2.1(C) (describing the shortcomings of Article 102 TFEU).

690. See *supra* Section 1.1(B) (analyzing the more aggressive options available in US antitrust enforcement).

691. See Friederiszick, *supra* note 665 (explaining how the US benefits from Europe's antitrust decisions.)

692. See *supra* text accompanying notes 630-632 (describing the US transparency measures in US trial and remedy procedure).