

The New Invisible Hand?
The Impact of Algorithms on Competition and Consumer Rights

Before the Senate Judiciary Committee
Subcommittee on Competition Policy, Antitrust, and Consumer Rights

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Chairman Klobuchar, Ranking Member Lee, and Members of the Subcommittee, thank you for inviting me to testify today. I'm here today to discuss the impact of algorithms on competition, with a particular focus on current litigation against Big Tech. I look forward to discussing with you further.

There is a remarkable degree of bipartisan recognition that Big Tech poses a serious threat to competition. The Trump and Biden Administrations and almost every state attorney general have filed landmark antitrust litigation against Big Tech.¹ Both Senators Hawley and Klobuchar have written books expressing grave concern about Big Tech abuse of power.² Senators across the political spectrum have expressed this concern. For example, guess which Senator from which political party said the following: “[N]o corporate actors ha[ve] done more to undermine competition and free enterprise than Big Tech.”³ Or this quote: “Nowhere is it more clear that we need presidential leadership to take actions to change laws and lead investigations than in Big Tech.”⁴ Or this, “[t]he idea that Big Tech operates in a functioning free market can no longer be taken as a serious position.”⁵ Or this, “[B]ig [T]ech companies have . . . bulldozed competition, used our private information for profit, and tilted the playing field against everyone else.”⁶ Or this, “It is high time for Congress to free our digital economy from the stranglehold of Big Tech.”⁷ The fact that it is difficult to guess correctly is telling. Republicans and Democrats disagree about many things, but one thing that unites many of them is the recognition of the anticompetitive harm posed by Big Tech.⁸ Much of that concern relates to how Big Tech has harnessed algorithms to exert market power like never before in history.

¹ Roger P. Alford, *The Bipartisan Consensus on Big Tech*, 71 EMORY L.J. 893, 921-28 (2022), available at https://scholarship.law.nd.edu/law_faculty_scholarship/1471/.

² Josh Hawley, *The Tyranny of Big Tech*, (2021); Amy Klobuchar, *Antitrust: Taking on Monopoly Power from the Gilded Age to the Digital Age* (2021).

³ Hawley, *supra* note 2, at 118.

⁴ Klobuchar, *supra* note 2, at 315.

⁵ Mike Lee, *NetChoice, American Antitrust: Reforms to Create Further Innovation and Opportunity*, YOUTUBE (June 22, 2021) <https://www.youtube.com/watch?v=pToFy8BY5C4>.

⁶ Elizabeth Warren (Team Warren), *Here's How We Can Break Up Big Tech*, MEDIUM (Mar. 8, 2019), <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c>.

⁷ The America Act: Lee Introduces Bill to Protect Digital Advertising Competition, (Mar. 30, 2023) (“Of the bill, Senator Vance said, ‘It is high time for Congress to free our digital economy from the stranglehold of Big Tech.’”).

⁸ Alford, *supra* note 1, at 929-32.

I. *Algorithms and Antitrust*

An algorithm is a sequence of rules performed in an exact order to carry out a certain task. Specifically, an algorithm is an unambiguous, precise, list of simple operations applied mechanically and systematically to a set of tokens or objects.⁹ Algorithms automatically perform repetitive tasks involving data processing and complex calculations that could be much more costly to execute for human beings. Recent developments in artificial intelligence and machine learning have brought algorithms to a new level, allowing computers to solve complex problems, make predictions and take decisions more efficiently than humans.¹⁰ This includes artificial intelligence and machine learning, which are algorithms programmed to iteratively learn, reason, self-correct, and create. Despite the obvious benefits of algorithms, the emergence of algorithms creates enormous risks for the abuse of monopoly power and as a facilitating factor in collusion between competitors.

The algorithms themselves recognize that they pose a risk to competition. When I typed in the query “[h]ow do algorithms harm competition?,” ChatGPT unabashedly confessed to me that “algorithms can harm competition in several ways” including by facilitating price fixing, advancing self-preferencing, suppressing the visibility of competitors, promoting information asymmetries, and creating search engine barriers to entry.¹¹ The ChatGPT results concluded with a warning to lawmakers that although “regulatory bodies . . . aim to address these issues by scrutinizing the use of algorithms . . . the fast-paced nature of technology often outpaces regulatory measures, necessitating ongoing efforts to adapt laws and regulations to protect fair competition in the digital age.”¹² I think this Committee should take that as a challenge.

II. *Algorithms and Price Fixing*

Price fixing is an agreement, conspiracy, or combination among competitors to raise, fix, or otherwise maintain the price at which their goods or services are sold. Such agreements can be tacit or express.¹³ Any agreement that restricts price competition violates the antitrust laws. According to the Department of Justice, examples of price fixing agreements include a commitment to hold prices firm, adopt a standard formula for computing prices, or adhere to a minimum fee or price schedule.¹⁴

Algorithms facilitate price fixing. When competitors adopt pricing algorithms, it can be a form of either tacit or express collusion in the marketplace, resulting in higher prices and less price

⁹ THE MIT ENCYCLOPEDIA OF THE COGNITIVE SCIENCES 11 (Robert A. Wilson & Frank C. Keil eds., 1999).

¹⁰ OECD, *Algorithms and Collusion: Competition Policy in the Digital Age*, 8-9 (2017) <https://www.oecd.org/daf/competition/Algorithms-and-collusion-competition-policy-in-the-digital-age.pdf>.

¹¹ ChatGPT Query “How Do Algorithms Harm Competition?”, available at <https://chat.openai.com/c/6f275def-80c8-4562-8fcc-49c0ae6f9c9f>.

¹² *Id.*

¹³ The “crucial question is whether the challenged anticompetitive conduct stems from independent decision or from an agreement, tacit or express.” *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544, 553 (2007). Non-express agreements that may violate Section 1 include “uniform behavior among competitors, preceded by conversations implying that later uniformity might prove desirable or accompanied by other conduct that in context suggests that each competitor failed to make an independent decision,” *Brown v. Pro Football, Inc.*, 518 U.S. 231, 241 (1996); or “a course of conduct, or a price schedule, once suggested or outlined by a competitor in the presence of other competitors, [that] is followed by all—generally and customarily—and continuously for all practical purposes, even though there be slight variations,” *Esco Corp. v. United States*, 340 F.2d 1000, 1008 (9th Cir. 1965).

¹⁴ *Price Fixing, Bid Rigging, and Market Allocation Schemes: What They Are and What to Look For*, DEPT. OF JUSTICE (January 5, 2016), available at <https://www.justice.gov/d9/pages/attachments/2016/01/05/211578.pdf>.

competition.¹⁵ The Department of Justice has declared that “[a]lgorithmic price fixing must . . . be subject to the same condemnation as other price-fixing schemes. . . . [W]hether firms effectuate a price-fixing scheme through a software algorithm or through human-to-human interaction should be of no legal significance.”¹⁶

Accordingly, the DOJ has prosecuted retailers selling on Amazon Marketplace when they adopted specific pricing algorithms for the sale of merchandise with the goal of offering online shoppers the same price for the same product and coordinating changes to their respective prices.¹⁷ It also has filed a statement of interest in support of litigation against Tennessee landlords that subscribed to an algorithm service called RealPage that has the effect of raising multifamily rental housing prices.

Such price fixing still requires concerted action, but evidence of such action can be found when competitors delegate decision making to a central hub, and that hub deprives the market of independent decision making.¹⁸ According to the DOJ, “[j]ust as ‘surrendering freedom of action and agreeing to abide by the will of the [trade] association’ can be enough for concerted action, so can be relying on a joint algorithm that generates prices based on shared competitively sensitive data.”¹⁹ Indeed, price fixing through the use of algorithms is easier and more effective than other types of cartel behavior, because the “software can enhance competitors’ ability to optimize cartel gains, monitor real-time deviations, and minimize incentives to cheat.”²⁰

Another form of collusion is the use of algorithms to signal to competitors to coordinate pricing behavior. This is well known in the context of the airline industry with the Airline Tariff Publishing Company. As discussed in the recent JetBlue/Spirit merger trial, algorithmic signaling is the practice of “flashing” information to competitors, a process in which airlines alert each other to price changes by updating and then quickly cancelling them on the shared system.²¹ The goal of such signaling is to surreptitiously communicate to other airlines to raise their prices.²² Through the power of algorithms, “firms can instantaneously execute countless price variations that are immediately detected by rivals, allowing them to coordinate strategies without giving enough time for consumers to react upon the price changes.”²³

If the Supreme Court has declared that cartels are the “supreme evil of antitrust,”²⁴ then algorithmic price fixing is a vehicle to facilitate and promote antitrust evil on a scale never seen before.

¹⁵ [Doha](#) Mekki, Principal Deputy Assistant Attorney General, Dept. of Justice Antitrust Division, Remarks at GCR Live: Law Leaders Global 2023 (Feb. 2, 2023).

¹⁶ Statement of Interest of the United States, *In re Realpage, Rental Software Antitrust Litigation (No. II)* (Nov. 15, 2023) (on file with Dept. of Justice).

¹⁷ [Press](#) Release, Dept. of Justice, Online Retailer Pleads Guilty for Fixing Prices of Wall Posters (Aug. 11, 2016) (on file with author).

¹⁸ *Am. Needle, Inc. v. NFL*, 560 U.S. 183, 195 (2010) (citations omitted).

¹⁹ Memorandum from the Dept. of Justice to the U.S. District Court Middle District of Tennessee Nashville Division 14 (Nov. 15, 2023) (on file with author).

²⁰ *Id.* at 2.

²¹ Leah Nylen, *JetBlue-Spirit Trial Revives DOJ Claim Over Air-Fare Collusion*, BLOOMBERG (Dec. 8, 2023, 6:00 AM), <https://news.bloomberglaw.com/antitrust/jetblue-spirit-trial-revives-doj-claim-over-air-fare-collusion>.

²² [OECD](#), *supra* note 10, at 29-32.

²³ Antonio Capobianco & Pedro Gonzaga, *Algorithm and Competition: Friends or Foes?* CPI ANTITRUST CHRONICLE 3 (Aug. 2017), <https://www.competitionpolicyinternational.com/wp-content/uploads/2017/08/CPI-Capobianco-Gonzaga.pdf>.

²⁴ *Verizon Comm. Inc. v. Trinko*, 540 U.S. 398, 408 (2004).

III. *Algorithms and Monopoly Abuse*

The use of algorithms also facilitates the abuse of monopoly power. I will provide just a few examples from recent government enforcement actions.

a. *Amazon Litigation*

In the Federal Trade Commission’s complaint against Amazon, there is evidence that Amazon uses algorithms to punish sellers that offer lower prices off Amazon. It does so in two ways. First, Amazon monitors when third party sellers on Amazon are lowering their prices and immediately copies those prices with its own branded products to prevent a rival from gaining market share. These third-party sellers quickly learn that there is no benefit to lowering prices to compete with Amazon-branded products, because Amazon will always match those prices.²⁵

Second, Amazon uses algorithms as the policing mechanism to enforce price parity clauses. If the Amazon algorithm detects that a seller has offered a lower price on any other online store, it will disqualify that seller from utilizing the Buy Box feature (i.e., the feature that makes it possible for buyers to click “Add to Cart” or “Buy Now”). Over 98% of all Amazon sales are made using the “Add to Cart” and “Buy Now” buttons, so any seller that offers price discounts elsewhere will be severely punished and, in Amazon’s words, their sales “tank.”²⁶ Amazon algorithms are like the predators in the sci-fi movie *A Quiet Place*, destroying any Amazon seller that dares to utter the sound of price competition.

b. *Google Search Litigation*

With respect to the Google search litigation, a central pillar of the Department of Justice’s case is Google’s anticompetitive efforts to deny its competitors the opportunity to scale. Google wants consumers to reach the conclusion that their competitors suck—the use the common parlance one often hears—and it will spend billions to control upstream inputs to deny its competitors the opportunity to improve. How it does so is simple. Search algorithms require query and click data to train the algorithms to improve search quality results. Even with the most sophisticated machine learning algorithms, massive amounts of data are essential for quality search results. The evidence in the Google search case showed that there is a viability threshold of around twenty market share and if you dip below that the quality degrades so much that there will be a downward spiral.²⁷ To deny its competitors the data necessary for scale, Google pays over \$25 billion per year to be the default search engine, including \$18 billion to Apple.²⁸ The outcome is similar to a search version of the *Hunger Games*, with the central Capitol living in overabundance while all the outer districts are starved with the essentials necessary for survival.

²⁵ Federal Trade Commission v. Amazon, No. 2:23-cv-01495-JHC, at ¶¶ 325-337.

²⁶ Federal Trade Commission v. Amazon, No. 2:23-cv-01495-JHC, at ¶¶ 16, 85, 276-285.

²⁷ United States v. Google, Transcript of Bench Trial, at 2678-2679 (Sept. 26, 2023) (Testimony of Mikhail Parakhin, Microsoft CEO of Advertising & Web Services).

²⁸ The problems of scale remain with the emergence of artificial intelligence, leading Microsoft CEO Satya Nadella to testify in the Google trial that the vicious cycle of default reinforcement will only continue because data is what feeds the AI models. United States v. Google, Transcript of Bench Trial, (Oct. 2, 2023) (Testimony of Satya Nadella, Microsoft CEO).

c. Google AdTech Litigation

Finally, there is the litigation against Google for using algorithms to rig auctions in the digital advertising market.²⁹ As outlined in both the Texas and DOJ complaints, Google’s monopoly position in the publisher ad server market gives it control over which exchanges can bid on the vast majority of ad inventory. Because of Google’s involvement and dominance on the buy-side, sell-side, and the exchanges in the middle, it has information advantages, and uses its algorithms to exploit those advantages for its own benefit and to the detriment of its own clients. Google secretly peeks at rival exchanges in order to inflate bids placed on its own exchange. It limits real-time bidding on publisher inventory to its own ad exchange, and impedes rival ad exchanges’ ability to compete on the same terms as Google’s ad exchange. And it manipulates auctions to insulate Google from competition, deprive rivals of scale, and halt the rise of rival technologies. For example, when an innovative alternative was introduced called Header Bidding that allowed publishers to secure more revenue through competitive bidding on multiple exchanges, Google used its algorithms in an attempt to destroy the emerging technology. Rather than managing this conflict of interest through firewalls or other internal controls, Google actively exploits those conflicts, extracting as much as four times the rate of other exchanges.³⁰ While the NYSE charges less than \$5 on a \$100,000 stock trade, Google charges over \$40,000 on a \$100,000 ad campaign. Google charges exorbitant sales commissions as high as Jordan Belfort’s commissions in the *Wolf of Wall Street*, and like the villain in that movie, it trades on inside information, and uses deceptive sales tactics on unsuspecting clients to enrich itself.

IV. Bipartisan Legislation to Address Big Tech Algorithmic Abuse

At this time last year there was immense enthusiasm about potential bipartisan legislation to address Big Tech’s abuse of its monopoly power. Many members of this Committee were sponsors of those legislative measures. But as we all know, Big Tech lobbyists spent over \$275 million opposing those bills, and they never made it to the floor for a vote.³¹

Only one antitrust reform made it all the way to the finish line, and that was the law that allowed state attorneys general to be treated the same as the United States, giving them the freedom to remain in the forum of their choosing when they file antitrust lawsuits.³² I’m happy to report that because of your efforts in passing that law, the *Texas v. Google* case returned to its original venue after languishing in New York for two years. Last month I was in Plano, Texas for a hearing before Judge Jordan of the Eastern District of Texas and I will be there again tomorrow morning

²⁹ Daniel S. Bitton and Stephen Lewis, *Clearing Up Misconceptions About Google’s Ad Tech Business*, COMPETITION POLICY INT’L (May 5, 2020) <https://www.competitionpolicyinternational.com/clearing-up-misconceptions-about-googles-ad-tech-business/>; Dina Srinivasan, *Why Google Dominates Advertising Markets*, 24 STAN. TECH. L. REV. 55 (2020).

³⁰ *Texas v. Google*, Third Amended Complaint (Jan. 14, 2022) at ¶¶ 64 *et. seq.*; *United States v. Google*, Complaint, at ¶¶ 126 *et. seq.* (Jan. 24, 2023).

³¹ David Dayen, *How Chuck Schumer Deep-Sixed the Tech Antitrust Bills*, THE AMERICAN PROSPECT, (Jan. 26, 2023), <https://prospect.org/power/2023-01-26-chuck-schumer-tech-antitrust-bills/>; Rebecca Klar and Karl Evers-Hillstrom, *How Big Tech Fought Antitrust Reform—and Won*, THE HILL, (Dec. 23, 2022 6:00 AM), available at <https://thehill.com/policy/technology/3785894-how-big-tech-fought-antitrust-reform-and-won/>; Eric Cortellessa, *Schumer Kills Bills Big Tech Feared Most, But Boosts Budgets of Agencies Targeting Them*, TIME, (Dec. 22, 2022 3:24 PM), <https://time.com/6243256/schumer-kills-antitrust-big-tech-bills/>; Mike Tanglis, *Lobby, Donate, Hire, Repeat: How Big Tech is Using the Inside Game to Slow Down Antitrust Reform*, PUBLIC CITIZEN, (Dec. 16, 2022), available at <https://www.citizen.org/wp-content/uploads/Lobby-Donate-Hire-Repeat.pdf>.

³² See generally Roger P. Alford, *Antitrust Accountability Delayed: State Antitrust Enforcement and Multidistrict Litigation*, 26 SMU SCI. AND TECH. L. REV. 7 (2023); available at <https://scholar.smu.edu/scitech/vol26/iss1/3/>.

for a second hearing. The choice to bring the case against Google before a rocket docket in Texas was wise and I commend you for helping us to exercise that choice.

In part because of Congress' failure to act to address antitrust reform, state legislatures are picking up the mantle and passing state laws to regulate the abuse Big Tech monopoly power. For example, in 2021 Texas passed a law that prohibits dominant social media companies from engaging in viewpoint discrimination.³³ Similar to non-discrimination laws in the cable industry,³⁴ this platform neutrality law requires that social media platforms treat users equally regardless of viewpoint. Its purpose is to prevent the platforms from using their market power to slant public debate. The law does not prohibit platforms from removing objectionable material, such as content that is unlawful, including obscene, lewd, harassment, or violent.³⁵ Rather, it requires platform rules to be applied in an even-handed way, recognizing that algorithms should not be used to discriminate at scale.³⁶ The Fifth Circuit upheld the law and it is now under review by the Supreme Court.³⁷ If the law is upheld, it could prevent social media platforms such as Facebook, YouTube and Twitter from continuing their practice of viewpoint discrimination.³⁸

Let me close by encouraging the Committee to approve a narrow and targeted piece of legislation that would address Google and other platforms abuse of market power in digital advertising market.³⁹ As I have testified before at this Committee, conservatives and liberals should support the AMERICA Act.⁴⁰ It has broad bipartisan support.⁴¹ It is narrow and targeted, particularly in comparison to other antitrust legislation proposed in the last congressional session. The legislation attempts to future proof the online digital advertising industry by imposing reasonable guard rails on the behavior of all medium and large online advertising brokers. And it does so by borrowing concepts relating to conflicts of interest and transparency that have been applied in other contexts so that government enforcers and courts can rely upon the standards established in those other industries to establish standards for this industry.

Thank you.

³³ HB 20, TEX. BUS. & COM. CODE § 120.002(b), [87th Leg., 1st Special Sess. \(Tx. 2021\)](#).

³⁴ *Turner Broadcasting System, Inc. v. FCC*, 512 U.S. 622, 656 (1994) (“[w]hen an individual subscribes to cable, the physical connection between the television set and the cable network gives the cable operator bottleneck, or gatekeeper, control over most (if not all) of the television programming that is channeled into the subscriber’s home. Hence, simply by virtue of its ownership of the essential pathway for cable speech, a cable operator can prevent its subscribers from obtaining access to programming it chooses to exclude.”).

³⁵ HB 20, TEX. BUS. & COM. CODE § 120.002(b), [87th Leg., 1st Special Sess. \(Tx. 2021\)](#); see also Adam Candebub & Eugene Volokh, *Interpreting 47 U.S.C. § 230(C)(2)*, 1 J. FREE SPEECH L. 175 (2021), available at <https://www.journaloffreespeechlaw.org/candebubvolokh.pdf>.

³⁶ Dhananjay Mittal (Dhananjay Mittal), *Algorithmic Bias: Reinforcing Prejudice on Social Media*, MEDIUM (Nov. 2, 2023), <https://medium.com/@dhananjaymittal/algorithmic-bias-reinforcing-prejudice-on-social-media-46de22eef5dc>.

³⁷ *NetChoice, LLC v. Paxton*, 49 F4th 439 (5th Cir. 2022), cert. granted 2023 WL 6319650 (2023).

³⁸ Mike Lee, *NetChoice, American Antitrust: Reforms to Create Further Innovation and Opportunity*, YOUTUBE (June 22, 2021) <https://www.youtube.com/watch?v=pToFy8BY5C4>; Emma Roth, *Twitter’s Research Shows that its Algorithm Favors Conservative Views*, THE VERGE, (Oct. 21, 2021 6:00 PM), <https://www.theverge.com/2021/10/22/22740703/twitter-algorithm-right-wing-amplification-study>; Paul Barrett, *The Twitter Bias Hearings Point to Favoritism, But Not for Liberals*, THE HILL, (Feb. 10, 2023 12:30 PM), available at <https://thehill.com/opinion/technology/3852594-the-twitter-bias-hearings-point-to-favoritism-but-not-for-liberals/>.

³⁹ Roger Alford, Prof. of Law, Univ. of Notre Dame, *Competition in the Digital Advertising Ecosystem*, Address Before the Senate Judiciary Comm. (May 3, 2023), available at <https://www.judiciary.senate.gov/imo/media/doc/2023-05-03%20-%20Testimony%20-%20Alford.pdf>; Roger Alford, Prof. of Law, Univ. of Notre Dame, *Antitrust and Harm to Innovation*, Address Before the Senate Judiciary Comm. (Dec. 15, 2021), <https://www.judiciary.senate.gov/imo/media/doc/Alford%20Testimony1.pdf>.

⁴⁰ S. 1073, 118th Cong. (2022).

⁴¹ S. 1073, 118th Cong. (2022) (Co-sponsors include Sen. Klobuchar, Amy (D-MN), Sen. Cruz, Ted (R-TX), Sen. Blumenthal, Richard (D-CT), Sen. Rubio, Marco (R-FL), Sen. Warren, Elizabeth (D-MA), Sen. Schmitt, Eric (R-MO), Sen. Hawley, Josh (R-MO), Sen. Kennedy, John (R-LA), Sen. Graham, Lindsey (R-SC), Sen. Vance, J. D. (R-OH)).