

November 1, 2022

The Honorable Lina M. Khan
Chair
Federal Trade Commission
600 Pennsylvania Avenue, NW
Washington, DC 20580

The Honorable Jonathan Kanter
Assistant Attorney General
Antitrust Division
United States Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530

Dear Chair Khan and Assistant Attorney General Kanter,

I write with serious concern about emerging competition and consumer protection issues that Big Tech's expansion into the automotive industry poses. Big Tech is setting itself up to be a one-stop shop for automakers—for everything from data collection, cloud storage, and analytics¹ to in-car navigation² to voice assistants³ to autonomous driving capabilities.⁴ To achieve this dominance, Google, Apple, and Amazon are leveraging their market power in the mobile operating system, digital app markets, and data infrastructure spheres to become the dominant players in the automotive sphere. This expansion has potentially alarming implications for developers, workers, and consumers. I ask that you use your authority to address these concerns as they emerge and prevent further overreach by Big Tech companies.

Big Tech firms have already begun embedding themselves into every aspect of future vehicles. At its Worldwide Developers Conference in June, Apple introduced the sweeping next generation of its car infotainment system CarPlay,⁵ promising to “reinvent the car experience” and claiming that CarPlay will no longer be just an infotainment system.⁶ This next-generation CarPlay will “powe[r] your entire instrument cluster” and provide “deep integration with the car’s hardware.”⁷ Similarly, Google has announced several automotive partnerships, including a

¹ Google, “Google Cloud for automotive,” <https://cloud.google.com/solutions/automotive>.

² Apple, “CarPlay,” <https://www.apple.com/ios/carplay>.

³ Buick, “Alexa Built In,” <https://www.buick.com/discover/connectivity/alexa-built-in>.

⁴ Jaguar, “Waymo and Jaguar Land Rover announce a long-term strategic partnership,” <https://www.jaguar.com/news/waymo-partnership.html>.

⁵ Apple, “WWDC 2022,” <https://www.youtube.com/watch?v=q5D55G7Ejs8>.

⁶ *Id.*

⁷ *Id.*

six-year partnership with Ford to integrate its Android Automotive Operating System (AAOS) into all new Ford vehicles and to provide wide-ranging data, artificial intelligence, and machine learning services.⁸ Under this partnership, Google will play a role in everything from creating “digital experiences” for Ford customers to modernizing Ford’s plant operations.⁹ Amazon is also establishing footholds for itself throughout the automotive industry, including creating autonomous driving systems,¹⁰ developing vehicle software,¹¹ and investing in autonomous ground transportation.¹² The rapidly expanding role of Big Tech in the auto industry raises several competition concerns.

Bundling and Exclusionary Agreements

Big Tech companies are using “all-or-nothing” bundling tactics to expand their anticompetitive grasp of the automobile market. Google’s AAOS product does not include other popular services like Google Maps or Google’s voice assistant.¹³ And in order for automakers to access any *one* of these additional services, Google requires them to purchase *all* of these services—a bundle called the Google Automotive Services suite.¹⁴ This forced bundling allows Google to leverage its dominance in navigation tools to acquire dominance in other areas (like voice assistants)—even in cases where automakers would prefer a different partner. The Department of Justice (DOJ) is reportedly already probing anticompetitive bundling of Google Maps with other Google products, and the company’s aggressive approach toward automotive services raises additional concerns.¹⁵

These tactics are reminiscent of past Big Tech bundling controversies. European regulatory authorities are probing Microsoft’s use of bundling tactics to promote its Azure cloud platform after Microsoft allegedly charged higher prices for Microsoft Office services if users tried to run Office on a competitor’s cloud platform instead of Azure.¹⁶ When web browsers were in their infancy, Microsoft was able to make Internet Explorer ubiquitous by bundling it with the Windows operating system and restricting competing browsers’ access to Windows.¹⁷ Now Google and Apple are following the same playbook, seeking to make their own automotive technology ubiquitous by bundling it with their automotive operating systems and app stores.¹⁸ These bundling tactics, if left unaddressed, could allow Big Tech companies, yet again, to

⁸ Ford claims this partnership will “reinvent the connected vehicle experience;” Ford, “Ford and Google to accelerate auto innovation, reinvent connected vehicle experience,” February 2, 2021, <https://media.ford.com/content/fordmedia/fna/us/en/news/2021/02/01/ford-google-accelerate-auto-innovation.html>.

⁹ *Id.*

¹⁰ Amazon, “AWS for Automotive,” <https://aws.amazon.com/automotive>.

¹¹ *Id.*

¹² New York Times, “Can Anyone Satisfy Amazon’s Craving for Electric Vans?,” Karen Weise and Neal E. Boudette, January 18, 2022, <https://www.nytimes.com/2022/01/18/technology/amazon-electric-vans.html>.

¹³ Google, “Google Cloud for automotive,” <https://cloud.google.com/solutions/automotive>.

¹⁴ Politico, “Big Tech’s Next Monopoly Game: Building the Car of the Future,” Leah Nysten, December 26, 2021, <https://www.politico.com/news/magazine/2021/12/27/self-driving-car-big-tech-monopoly-525867>.

¹⁵ Reuters, “U.S. probe of Google Maps picks up speed,” March 30, 2022, <https://www.reuters.com/business/exclusive-us-probe-google-maps-picks-up-speed-sources-2022-03-30>.

¹⁶ Financial Times, “Microsoft’s tactics to win cloud battle lead to new antitrust scrutiny,” Richard Waters, April 13, 2022, <https://www.ft.com/content/350e7fed-cd52-4a0a-9902-5f2d9ebc3fe7>.

¹⁷ *United States v. Microsoft Corporation*, 253 F.3d 34 (D.C. Circuit, 2001).

leverage market power in one sphere to cripple competition in others.

In addition to using these “all-or-nothing” tactics to force automakers to offer their products, Big Tech companies are also pursuing agreements with automakers to make those products the default option for consumers. Amazon secured an agreement with Buick to include Alexa by default in Buick vehicles.¹⁹ Google’s agreement with Ford requires Google Automotive Services to come pre-installed on Ford vehicles.²⁰ Google has similar agreements with Polestar²¹ and its parent company Volvo²² to ship future vehicles with AAOS as the pre-installed default. By negotiating with automakers to have their services be the default option for consumers rather than giving consumers an upfront choice, Big Tech companies are creating barriers to the adoption of their competitors’ products.

These deals are similar to the exclusionary default agreements Google paid billions to secure to achieve its Google Search monopoly, which is currently being challenged by the Department of Justice and 14 state attorneys general.²³ Google pays billions of dollars to Apple and Mozilla to be the default search tool on Safari and Firefox, respectively, putting an additional burden on users who may prefer a different tool.²⁴ Now Google and other tech companies seek to use the same types of agreements that made Google Search ubiquitous—and that are now rightfully being scrutinized by antitrust regulators—to cement their market share in the automotive space.

App Store Gatekeeping

Big Tech’s expansion into cars also threatens to spread its anticompetitive mobile app markets practices to the automotive realm. Through their control of these app markets, Google and Apple force third-party developers to use these Big Tech firms’ own in-app payment system, preference Google’s and Apple’s own apps in app store listings, and prohibit third-party developers from sharing information about pricing on other platforms with users. The take-it-or-leave-it terms of these app markets allow Google and Apple to stifle competition and extract higher prices from users and developers. The same dynamic is emerging with Big Tech’s automotive developments. All Android Auto and CarPlay applications must be approved by Google²⁵ and Apple,²⁶ respectively. The combination of Big Tech companies’ exclusive control over which developers can offer apps on their app stores and their desire to be the default

¹⁸ Politico, “Big Tech’s Next Monopoly Game: Building the Car of the Future,” Leah Nysten, December 26, 2021, <https://www.politico.com/news/magazine/2021/12/27/self-driving-car-big-tech-monopoly-525867>.

¹⁹ Buick, “Alexa Built In,” <https://www.buick.com/discover/connectivity/alexa-built-in>.

²⁰ Politico, “Big Tech’s Next Monopoly Game: Building the Car of the Future,” Leah Nysten, December 26, 2021, <https://www.politico.com/news/magazine/2021/12/27/self-driving-car-big-tech-monopoly-525867>.

²¹ Polestar, “Google built in,” <https://www.polestar.com/global/polestar-2/interior/software-apps/google-built-in>.

²² Volvo, “Infotainment and Digital Consumer Experience,” <https://group.volvocars.com/company/innovation/android>.

²³ Vox, “How much longer can Google own the internet?,” Sara Morrison, May 20, 2022, <https://www.vox.com/recode/23132580/google-antitrust-search-android-mobile-ads>.

²⁴ *Id.*

²⁵ Google, “Android for Cars Addendum to the Developer Distribution Agreement,” <https://play.google.com/about/auto/developer-distribution-agreement-addendum>.

operating system on new vehicles is a recipe for anticompetitive abuse.

This gatekeeping power allows Big Tech companies to extract billions of dollars from app developers and consumers. Apple, for example, uses its gatekeeper position in its app markets to extract a 30% cut from all app store purchases.²⁷ Expanding the reach of restrictive app markets to the automotive sector will allow Google and Apple to control which competitors are allowed to host apps on its platform while extracting billions of dollars in middle-man fees from the developers that are allowed to host apps. For these developers, allowing Google and Apple to take control of car operating systems could mean an end to their ability to compete outside Google's and Apple's restrictive platforms. Automotive applications have significant potential to provide drivers and passengers with information, enhance safety, and provide entertainment. But allowing Big Tech companies to cement their exclusive control over the terms of auto app competition could stifle a nascent industry.

Anticompetitive Uses of Data

Big Tech is also laying the groundwork for potentially anticompetitive uses of data generated by its new role in the automobile industry. In order to develop autonomous vehicle technology, companies will need to collect, classify, and analyze massive amounts of vehicle data. Big Tech is positioning itself to monopolize the largest source of that data: consumers and their cars. Rather than needing its own fleet of test vehicles, Big Tech could simply leverage the fleets of its automaker partners to collect troves of valuable data.²⁸ One of Google's automotive cloud products, the Connected Car Telemetry Platform, promises customers it will “[k]nit all of your vehicle data sources together at scale and in real time.”²⁹ Google says this product will collect and analyze car location data, telemetry data, camera footage, and radar data, and it advertises that its service is scalable “to manage millions of vehicles.”³⁰

If Google and other Big Tech firms use the masses of vehicle data they acquire to obtain an advantage over companies that are shut out of the market, the effects will be difficult to reverse. Google has not announced any guardrails on how the automotive services it offers to automakers will interact with Google's own self-driving car company Waymo. Dozens of

²⁶ Apple, “Apple Developer Program License Agreement,” <https://developer.apple.com/support/downloads/terms/apple-developer-program/Apple-Developer-Program-License-Agreement-20220606-English.pdf>.

²⁷ After widespread criticism of its 30% commission, Apple reduced its fee to 15% for businesses that make below \$1 million in sales on the App Store. As Andy Yen, the founder of ProtonMail argues, this policy offers lower fees only to companies “not big enough to seriously compete with [Apple].” “[B]ut once you start getting traction,” Yen said, “[Apple] will immediately use anti-competitive pricing to reinforce [its] dominance.” Washington Post, “Apple cuts some App Store fees, but critics call it a ploy to avoid regulation.” Reed Albergotti, November 18, 2020, <https://www.washingtonpost.com/technology/2020/11/18/apple-app-store-small-business>.

²⁸ Tesla already uses this approach to iteratively refine its own autonomous driving technology. Yarrow Bouchard, “Tesla's Deep Learning at Scale: Using Billions of Miles to Train Neural Networks, May 6, 2019, <https://towardsdatascience.com/teslas-deep-learning-at-scale-7eed85b235d3>.

²⁹ Google, “Harness vehicle data to drive insights for production innovation,” https://services.google.com/fh/files/misc/google_cloud_for_manufacturing_connected_vehicle.pdf.

³⁰ *Id.*

companies already collect—and in some cases, sell—vast amounts of connected vehicle data.³¹ Without strict oversight and enforcement, there is a real risk that Big Tech will capture mountains of vehicle data from its self-driving car partnerships with automakers only to turn around and use that data to refine its own competing technologies.³²

Anticompetitive Acquisitions

Finally, antitrust authorities should be vigilant for attempts by Big Tech firms to use their size to buy up companies that could pose a threat to their dominance. Google's dominance in digital mapping came in part from its acquisition of Waze,³³ one of Google Maps' biggest competitors, an acquisition that reportedly stifled Waze's growth.³⁴ Amazon, which is set to become the largest U.S. delivery service,³⁵ has recently acquired self-driving van company Zoox³⁶ and a stake in self-driving truck company Plus.³⁷ These acquisitions should put enforcement agencies on alert to future acquisitions. If Amazon were allowed to control a significant share of the autonomous ground transportation market, the biggest threat to its current delivery dominance, the implications for consumers could be grave. Assistant Attorney General Kanter has called for "aggressive enforcement against acquisitions by firms that already possess a dominant position,"³⁸ and Big Tech's forays into the automotive space demand exactly that kind of scrutiny. Big Tech has already spent billions to acquire promising competitors that threatened their market power. These companies cannot be allowed to buy their way out of having to compete.

Conclusion

Without proactive and rigorous oversight, I fear that Google, Apple, and Amazon will bring their anticompetitive, anti-consumer, and anti-labor practices to the automotive sector. Earlier this year, several of our colleagues in the House of Representatives³⁹ and 30 advocacy

³¹ The Markup, "Who Is Collecting Data from Your Car?," Jon Keegan and Alfred Ng, July 27, 2022, <https://themarkup.org/the-breakdown/2022/07/27/who-is-collecting-data-from-your-car>.

³² CNBC, "Apple's new car software could be a trojan horse into the automotive industry," Kif Leswing, July 24, 2022, <https://www.cnbc.com/2022/07/22/apple-carplay-could-be-a-trojan-horse-into-the-automotive-industry.html>.

³³ Washington Post, "How Big Tech got so big: Hundreds of acquisitions," Chris Alcantara, et al., April 21, 2021, <https://www.washingtonpost.com/technology/interactive/2021/amazon-apple-facebook-google-acquisitions>.

³⁴ Reuters, "Waze's ex-CEO says app could have 'grown faster' without Google," Paresh Dave, February 18, 2021, <https://www.reuters.com/article/us-alphabet-google-waze/wazes-ex-ceo-says-app-could-have-grown-faster-without-google-idUSKBN2AJ02O>.

³⁵ CNBC, "Amazon poised to pass UPS and FedEx to become largest U.S. delivery service by early 2022, exec says," Annie Palmer, November 29, 2021, <https://www.cnbc.com/2021/11/29/amazon-on-track-to-be-largest-us-delivery-service-by-2022-exec-says.html>.

³⁶ Financial Times, "Amazon acquires self-driving start-up Zoox for over \$1.2bn," Patrick McGee and Dave Lee, June 26, 2020, <https://www.ft.com/content/37ae69d9-f160-48c3-b3c5-736730c110ce>.

³⁷ Bloomberg, "Amazon Snaps Up Option to Buy Stake in AI Truck-Driving Startup," Lulu Yilun Chen and Gillian Tan, June 21, 2021, <https://www.bloomberg.com/news/articles/2021-06-21/amazon-is-in-talks-to-buy-stake-in-ai-truck-driving-startup-plus>.

³⁸ Department of Justice, "Assistant Attorney General Jonathan Kanter Delivers Keynote at CRA Conference," March 31, 2022, <https://www.justice.gov/opa/speech/assistant-attorney-general-jonathan-kanter-delivers-keynote-cra-conference>.

groups⁴⁰ wrote to you both expressing their concern on this issue. I similarly believe these concerns should be a priority as the Federal Trade Commission (FTC) and DOJ ramp up their antitrust and consumer protection efforts. I was encouraged by the FTC's suit to block Meta from acquiring virtual reality company Within, an action that demonstrates the agency's commitment to intervening *before* further market consolidation results in harms to competition.⁴¹

As Chair Khan has written, "it is much easier to promote competition at the point when a market risks becoming less competitive than it is at the point when a market is no longer competitive."⁴² This market finds itself at exactly such a juncture. Big Tech could expand its anticompetitive grasp to the automotive sector to the detriment of consumers and workers, or it could abide by procompetitive restrictions that will ensure open, innovative markets that better serve consumers' and workers' interests. Given these concerns, it is important for the FTC, the DOJ, and legislators in Congress to act quickly and decisively to promote competition in this venue.

Thank you both for your continued work to strengthen antitrust enforcement on behalf of consumers and workers and for your attention to this matter.

Sincerely,



Elizabeth Warren
United States Senator

³⁹ Letter from Rep. Jamie Raskin to FTC Chair Lina Khan and Assistant Attorney General Jonathan Kanter, April 1, 2022, https://raskin.house.gov/_cache/files/c/1/c18b29cc-478f-4ebc-8cd7-9b32a505ebd2/C84F9F2E42F91F13FA911A6B24F2EA64.4-1-22-rep.-raskin-letter-re-big-tech-auto-industry.pdf.

⁴⁰ Letter from Advocacy Groups to FTC Chair Lina Khan, Assistant Attorney General Jonathan Kanter, Sen. Amy Klobuchar, and Rep. David Cicilline, January 25, 2022, https://s3.amazonaws.com/demandprogress/images/Big_Tech_Auto_Letter.pdf.

⁴¹ New York Times, "F.T.C. Sues to Block Meta Virtual Reality Deal as It Confronts Big Tech," David McCabe and Mike Isaac, July 27, 2022, <https://www.nytimes.com/2022/07/27/technology/meta-facebook-vr-ftc.html>.

⁴² Lina Khan, "Amazon's Antitrust Paradox," January 2017, https://www.yalelawjournal.org/pdf/e.710.Khan.805_zuvfyeh.pdf.