IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

OpenX Technologies, Inc., and

OpenX Ltd.,

Plaintiffs,

v.

Google LLC,

Defendant.

Case No. 1:25-cv-1282

COMPLAINT

JURY TRIAL DEMANDED

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Plaintiffs OpenX Technologies, Inc. and OpenX Ltd. (together, "OpenX"), by and through their undersigned counsel, bring this Complaint for damages, declaratory and injunctive relief against Google LLC ("Google") and allege as follows:

NATURE OF THE ACTION

1. Google's decades-long scheme to monopolize the digital advertising industry and block new market entrants has now been fully revealed and adjudicated as illegal anticompetitive conduct. OpenX, an innovative independent digital advertising platform that attempted to introduce competition in the industry, was continually thwarted by Google's conduct. OpenX introduced products and services that made sales of digital advertising more efficient by improving the market's ability to value individual ad spaces, optimizing outcomes for both buyers and sellers. Each time OpenX did so, Google used its dominance to rig the rules by which digital advertising is bought and sold, to the detriment of OpenX and the entire industry. Google's conduct has stifled innovation, harmed competition, decreased product quality and caused significant damage to OpenX, as well as to Google's own publisher and advertiser customers. OpenX now brings this case as a follow-on action to *United States v. Google LLC*, Case No. 1:23-CV-108 (E.D. Va.) ("*United States v. Google*"), to rectify the harm to OpenX that Google caused through its anticompetitive practices.

2. Digital advertising is the lifeblood of the Internet. Billions of digital display ads are shown to users every day—a scale of transactions that surpasses the daily average number of shares traded on the New York Stock Exchange many times over. Revenue from these digital advertisements compensates journalists, photographers, content creators and other online publishers, and allows users to access billions of webpages for free or, at most, minimal cost. Some of the world's most popular websites (*e.g.*, MSN, Weather.com and Yahoo!) are free

because the revenue from digital advertising subsidizes their maintenance and development. The Internet's rapid growth and development has been funded at every stage by digital advertising. Digital advertising also has created numerous job opportunities—from e-marketing and advertising specialists, to data analysts who ensure the efficient use of advertising resources. The Internet's development into the world's primary channel for communications, media and entertainment, coupled with the ability to collect data about the preferences of consumers who search for and access information online, has made digital advertising extremely popular. Digital advertising has overtaken traditional advertising channels such as print, radio and television advertising. Today, more than thirty websites have achieved the milestone of welcoming over a billion visits per month, allowing advertisers to reach expansive and broad-ranging audiences.

3. Whereas traditional advertising largely depends on a one-size-fits-all strategy in which all users receive the same ads, digital advertising provides bespoke advertising tailored to particular users at a given time and location. As a result, digital advertising is more relevant and informative for the user—and more valuable for advertisers and publishers—than traditional forms of advertising. Digital advertisers employ this personalized understanding to place specific advertisements in front of specific users at specific times and specific locations, to maximize their return on advertising expenditures.

4. The digital advertising industry depends on a series of interrelated tools, collectively called the **ad tech stack**, that connect digital publishers—website owners who have advertising space to sell—with digital advertisers, who wish to buy such advertising space. Conceptually, the ad tech stack is intended to ensure that the right (*i.e.*, most relevant) advertisement is placed on the right website in front of the right user at the right time. The ad

tech stack includes both "buy-side" tools used by advertisers to buy digital ads and "sell-side" tools used by publishers to sell digital ad space. These tools process millions of advertising transactions in a fraction of a second, identifying and delivering tailored and useful ads to users in the time it takes a webpage to load.

5. Publishers in the digital advertising space did not always have the ability to sell unique advertising space to specific advertisers. Historically, publishers were constrained by direct deals—an inefficient system for selling advertising space in bulk, similar to the system for selling static print advertisements in a newspaper. That system did not reflect the unique value of each user viewing an ad, and it resulted in much ad space going unsold.

6. OpenX disrupted that inefficient system, working at the forefront of multiple groundbreaking advancements in the digital advertising industry. In 2008, OpenX introduced its enterprise-level ad server, a tool that helped publishers maximize their revenue by algorithmically filling each advertising space with the most valuable advertisement available.

7. Then, in 2009, OpenX pioneered "real-time bidding", which, through a product called an ad exchange, allowed a publisher to obtain a dynamic, real-time price from an advertiser that was tailored to a given ad space presented to a particular user. This innovation dramatically improved matches between publishers and advertisers, enabled publishers to successfully sell more ad space, increased publisher revenues and led to a far more efficient market for both publishers and advertisers.

8. OpenX once again transformed the industry in 2013, when it developed "header bidding", a technology that allows publishers to compare multiple competing real-time bids from multiple advertisers bidding through multiple ad exchanges. Header bidding technology was quickly adopted by the vast majority of publishers. OpenX's header bidding innovations—

including several covered by patents issued to OpenX—again led to higher revenues for publishers and a better return on investment for advertisers.

9. Despite OpenX's contributions to the development of digital advertising and the competitive products it offered, Google's anticompetitive acts repeatedly crippled OpenX's growth. In its early years, OpenX was able to show modest but meaningful growth in the multibillion-dollar ad exchange market. But Google employed a series of anticompetitive and illegal strategies that diminished OpenX and thwarted its ability to compete.

10. The Court has found that Google willfully and illegally acquired and maintained monopolies in two markets that facilitate digital advertising—publisher ad servers and ad exchanges. In fact, Google now controls, and at all times relevant to this Complaint has controlled, nearly the entire ad tech stack, calling the shots as to which ads get placed, where they get placed and at what prices they get placed.

11. Google can exert this level of control over advertising transactions because it is simultaneously the broker for a large number of buyers, the broker for the vast majority of sellers, and the operator of the auction house where most transactions between buyers and sellers occur. Google gained that control by using its market power to acquire several monopolies in sequence. Most specifically, Google controlled the largest source of digital advertising demand in the world through its ad buying tool, AdWords. Google had attracted millions of advertisers to AdWords by offering them the unique ability to purchase ads shown to users of Google's monopolistic search engine. Google then established monopolies in the ad server and ad exchange markets for open-web display advertising by tying access to demand from AdWords to the use of its ad exchange and tying access to its ad exchange to the use of its ad server. Google employees themselves have acknowledged the conflict of interest inherent in Google owning

dominant tools up and down the ad tech stack: "The analogy would be if Goldman or Citibank owned the NYSE [New York Stock Exchange]."

12. Google's illegal and anticompetitive conduct has hurt participants across the digital advertising industry, including its own customers. As this Court has held, "Google has willfully engaged in a series of anticompetitive acts to acquire and maintain monopoly power in the publisher ad server and ad exchange markets for open-web display advertising". *United States v. Google*, Dkt. No. 1410 ("Liability Op.") at 114. As a result, publishers generate less money from their advertising inventory, while advertisers obtain less efficient matches and a poorer return on investment. Google's anticompetitive conduct has crippled competitors like OpenX at every turn, preventing them from competing on a level playing field and leaving them with fewer resources to develop groundbreaking innovations. Consequently, users view less useful and relevant ads, and have access to less and lower-quality content—all because Google manipulates auctions to benefit itself rather than to facilitate the optimal matches between advertisers and publishers. Google's conduct threatens the loss of a truly free and open Internet by siphoning off billions of dollars from advertisers, publishers and competing ad tech providers alike, to the benefit of a single monopolist: Google.

13. Recognizing that OpenX's innovations posed a threat to Google's stranglehold over its myriad ad tech monopolies, Google has targeted OpenX repeatedly in an effort to stunt its growth and to marginalize OpenX. Among other things, Google has coerced publishers not to work with OpenX through illegal tying arrangements, exploited its monopolies to rig digital advertising auctions so that OpenX wins fewer transactions, and steered advertiser dollars that Google controls away from OpenX and towards Google's own ad exchange, all while concealing much of its conduct from both OpenX and Google's own advertising customers. Google thus

has undertaken conduct that fortifies its monopolies at the expense of its own customers on both the buy side (advertisers) and sell side (publishers).

14. This Court already has found Google's conduct in the digital advertising markets to be anticompetitive. OpenX now seeks to hold Google accountable for the harm that Google's wrongful conduct caused to OpenX specifically.

PARTIES

15. Plaintiff OpenX Technologies, Inc. is a Delaware corporation with its principal place of business in Pasadena, California.

16. Plaintiff OpenX Ltd. is a private limited company incorporated in England and Wales with its registered office in London. OpenX Ltd. is the parent of OpenX Technologies, Inc.

17. Defendant Google LLC is a Delaware limited liability company with its principal place of business in Mountain View, California. Google LLC is the indirect primary operating subsidiary of the publicly traded holding company Alphabet Inc. The sole member of Google LLC is XXVI Holdings, Inc., a Delaware corporation with its principal place of business in Mountain View, California.

JURISDICTION AND VENUE

18. This Court has subject-matter jurisdiction over OpenX's federal antitrust claims pursuant to the Clayton Antitrust Act, 15 U.S.C. §§ 15 and 26, and 28 U.S.C. §§ 1331 and 1337.

19. This Court has personal jurisdiction over Google. Google engages in, and its activities substantially affect, interstate trade and commerce. Google provides a range of advertising technology products and services that are marketed, distributed and offered to

consumers throughout the United States and within this District, across state lines and internationally.

20. Venue is proper in this District under Section 12 of the Clayton Act, 15 U.S.C. § 22, and under 28 U.S.C. § 1391, because Google transacts business in and is found within this District.

RELEVANT FACTS

I. Digital Advertising Develops as a Major Medium for Selling Ads.

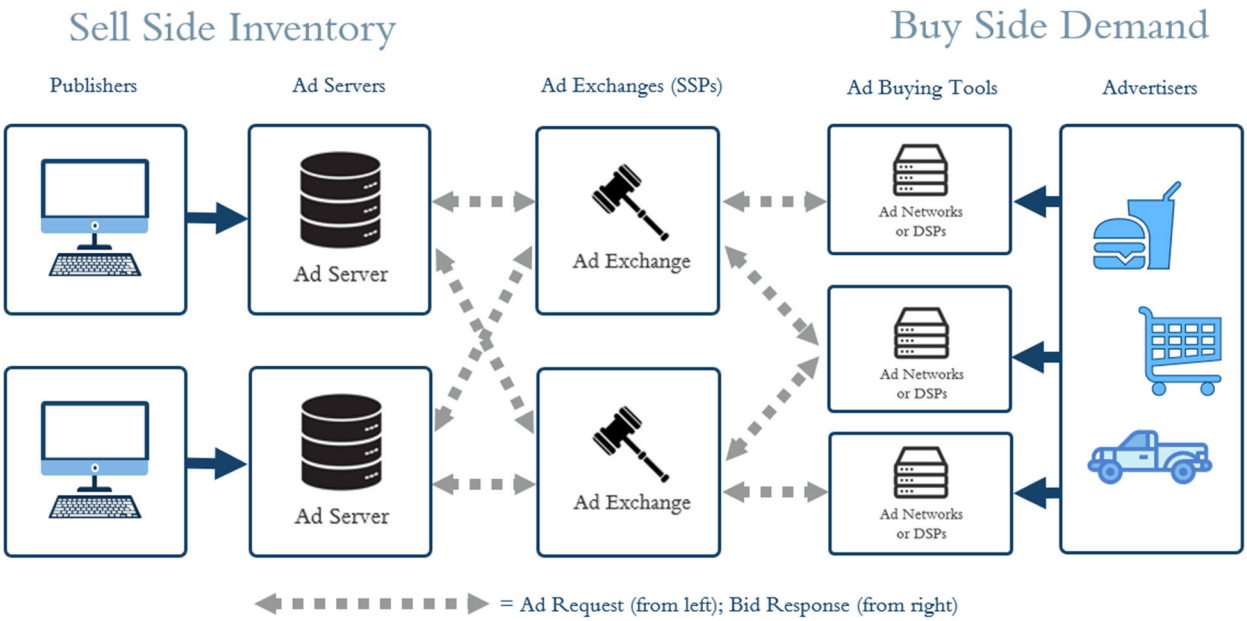
21. Digital advertising is the foundation by which publishers can offer, and users can obtain, free content on websites. It allows publishers to monetize advertising space on those websites rather than exclusively rely on user access fees. Some of the world's most popular websites, such as Weather.com, are able to make much or all of their content available for free—and even to further develop their website content—because of the revenue that digital advertising provides. Other websites, like *The New York Times* and *The Wall Street Journal*, use a hybrid model that includes both advertisements and paid subscriptions that allow users to access certain content that is placed behind paywalls. Although users see content and advertisements simultaneously and instantaneously every time a webpage loads, behind the scenes, advertising transactions occur in milliseconds. Billions of such transactions occur each day across the Internet, resulting in trillions of digital display ad spaces bought by advertisers and displayed to users each month.

22. Although the technologies within the ad tech stack can sometimes facilitate the sale of other forms of digital advertising, this Complaint focuses specifically on open-web display advertising. Display ads are online ads that engage users with text or image-based marketing content, link to the advertiser's webpage and often appear in rectangular spaces on

publishers' websites.[1] Open-web display ads are display ads that run on websites that use third-party ad tech infrastructure to match advertisers' ads to publishers' inventory.[2]

23. Figure 1, below, is a simplified diagram of the various entities within the ad tech stack, which the following sections explain in further detail.

Figure 1: The Ad Tech Stack



24. **Publishers** are the entities that control websites and publish content on them. They typically view selling ad space on their websites as a major source of revenue. *See* Liability Op. at 7–8. This revenue is generated by selling opportunities to place a specific ad in a specific ad space in front of a specific user at a specific time, each such ad constituting an

[1] Display ads are distinct from other forms of digital advertising, such as search ads (*i.e.*, sponsored results in a search engine), instream video ads (*i.e.*, advertisements that play before, during or after a streaming video), or mobile app ads (*i.e.*, ads shown within a non-browser mobile app).

[2] In contrast, some websites operate as "walled gardens" and offer their ad space inventory to advertisers exclusively through proprietary tools. One prominent example of a walled garden is YouTube, which is owned and operated by Google itself; another is Facebook.

impression.[3] The industry convention is to measure prices of impressions in cost per thousand impressions (cost per mille, or "CPM"). Large, sophisticated publishers use modern ad tech products that facilitate large-scale advertising campaigns and increase their control over where, how, when and to whom ads are shown.

25. **Advertisers**, on the other end of the transaction from publishers, are the companies that pay to place advertisements on publishers' websites to promote their goods or services or to present their messages to Internet users.

26. Between publishers on one end and advertisers on the other, today's ad tech stack includes multiple intermediaries that help complete the transaction. When a user navigates to a webpage, as the webpage loads, publisher-selected advertising spaces are offered for sale through the technology powering digital advertising. Advertisers can choose to bid on each ad space, ad tech tools partially configured by the publisher select the winning bid, and the winning advertiser's ad loads onto the webpage and is presented to the user. All this occurs seamlessly; when the webpage loads, the user sees both the webpage content and the advertisements that were just purchased to be placed on that webpage.

27. Today's sophisticated, efficient and highly automated systems to target advertisements to specific Internet users are a relatively recent phenomenon. In the early years of the digital advertising industry, advertisements were not tailored to each user, but rather were purchased in bulk regardless of the individual users who navigated to a website (similar to print advertising). In the early 2000s, publishers sold inventory directly to advertisers almost exclusively through **direct deals**.

[3] The terms "impressions" and "ad spaces" are sometimes used interchangeably to describe the spaces on websites that advertisers purchase to display ads. An ad space is the real estate that the publisher offers for sale; an impression is the advertisement shown to users after the sale.

28. For example, a publisher like *The New York Times* could strike a deal with a specific advertiser like Ford to show 50 million ad impressions per month on its homepage for a new Ford model. This system of direct deals essentially transported print advertising to the Internet medium. Advertisers paid for impressions in bulk in advance of users actually visiting a website, and those advertisers did not know at the time of the purchase whether those future users would be interested in their products. Just like in print advertising, all that Ford would have known in the above transaction was that its advertisement would be displayed 50 million times per month to readers of *The New York Times*.

29. As the Internet advanced and attracted more and more users, direct deals proved lucrative for large publishers. But they also had serious limitations. Publishers selling inventory through direct deals lacked an efficient way to sell any remaining unsold inventory, called remnant inventory, that was not allocated through direct deals—leaving a lot of value on the table. The dynamic nature of the Internet posed challenges in anticipating how many users would visit a website, making it difficult to accurately scope direct deals. If the number of users visiting a website was larger than anticipated—for example, because of a major but unexpected news event—those additional ad spaces would often go unsold, causing publishers to lose out on significant advertising revenue. Moreover, many publishers grew rapidly during a time of explosive growth in Internet usage. Direct deals did not provide sufficient scale or flexibility to account for publishers' organic growth and expansions of inventory.

30. In addition, because direct deals require a high enough volume of impressions to offset transaction costs and a dedicated sales or marketing team to negotiate bespoke contracts with large advertisers, smaller publishers and advertisers often lacked the resources and volume to transact this way. For example, whereas *The New York Times* may have a sizeable sales force

dedicated to identifying large advertisers that value its readers, contacting those advertisers and negotiating advertising contracts, smaller publishers like individual bloggers running interest-specific websites may lack the resources or time to do so. Another key disadvantage of direct deals was that they often made little use of information about the users who viewed each impression, leaving "one of the largest sources of value of digital advertising, personalized targeting, largely untapped". Liability Op. at 10.

31. To overcome problems with direct deals, publishers sometimes sold remnant inventory in bulk (*i.e.*, with no valuation of individual ad spaces) to **ad networks**, which would later resell those ad spaces to advertisers at higher prices. "Ad networks provide a simple way to connect advertising demand with publisher inventory, and are now primarily used by smaller advertisers and publishers." Liability Op. at 13. But as the Internet exploded in popularity, more sophisticated solutions were needed. Responding to these market inefficiencies, OpenX and other ad tech companies sought to address the limitations of direct deals and provide a more effective allocation of publishers' inventory and advertisers' dollars.

II. OpenX Seeks To Compete Through Innovation.

32. As noted above, although the digital advertising industry originated as the online version of print advertising, it has undergone a profound transformation in the past two decades to better monetize publisher ad spaces and improve matches between publishers and advertisers.

33. Around 2008, two tech entrepreneurs, Tim Cadogan and Jason Fairchild, began exploring the possibility of revolutionizing sales of open-web display advertising.

34. Cadogan was a former management consultant at BCG with degrees from the London School of Economics, Oxford and Stanford. Fairchild was an early executive at several startups, including EarthLink Network, where he had worked out of a converted dentist's office

in Los Feliz, California, using the x-ray room as his personal office. Fairchild grew EarthLink Network from 20 to 1,500 employees and to a billion-dollar valuation.

35. Cadogan and Fairchild worked together at Overture, formerly known as GoTo.com, an early search advertising company. Overture was the pioneer in developing search advertising—the sale of text-based advertisements to accompany search results on search engine results pages. Overture sold search ads to partners like MSN, AOL and Yahoo!. In 2003, Overture was acquired by Yahoo! for over a billion dollars. Cadogan subsequently ran the search business and, later, most of the advertising business at Yahoo!.

36. At Overture, Cadogan and Fairchild witnessed firsthand the efficiency of search advertising auctions, which allocated each search ad to the highest bidder for that ad. Cadogan and Fairchild sought to bring similar efficiencies to the then-woefully inefficient marketplace for display advertising, where the dominant model was the sale of inventory in bulk, either through direct deals or an ad network aggregator, with no optimization of price at the single ad space level.

37. To carry out their vision, in 2008, Cadogan and Fairchild took over OpenX, then a small UK-based company. At the time, OpenX had a single product—a limited-functionality, open-source ad server.

A. ***OpenX Develops an Innovative Ad Server.***

38. **Ad servers** help publishers maximize revenue by providing tools that allow them to manage inventory across multiple web pages, set inventory price floors, schedule and manage direct sales campaigns, manage indirect sales of remnant inventory (*i.e.*, inventory that goes unsold in direct deals) and create detailed reports on inventory performance. As this Court has found, "ad servers make it easier for publishers to place multiple sources of advertising demand in competition against each other, as well as to run advertisements pursuant to direct deals with

large advertisers". Liability Op. at 16. Ad servers identify users visiting the publisher's web page, tagging each user with a unique user ID. They then execute the publisher's instructions about how to sell ad space by routing inventory between direct and indirect sales to maximize the yield or value of each ad space and make the ultimate decision about which ad to "serve" to a user. Because of the efficiency of a single centralized system to manage a publisher's entire inventory, and because that system is highly customized to each publisher (and such customization is labor-intensive and expensive), publishers typically use only one ad server to handle their inventory, and switching between ad servers is rare.

39. When Cadogan and Fairchild took over OpenX, its open-source ad server was a niche player in the ad-serving space. The dominant player in the space was DoubleClick for Publishers ("DFP"), which was the mainstay ad server for display advertising among most large publishers. But DFP relied on legacy technology from the 1990s; required a large team of ad operations professionals to manage forecasting, scheduling and reporting; had data control limitations; and was not optimized for new ad formats. Accordingly, Cadogan and Fairchild decided to make their first foray into the display advertising space by developing a new and improved ad server that would challenge DFP.

40. In 2008, OpenX released its first enterprise ad server, the culmination of millions of dollars of investment and months of work. OpenX's enterprise ad server was highly customizable, allowing publishers to maintain control of ad campaigns while still optimizing for yield. That is, OpenX's ad server helped publishers maximize revenue by optimally allocating ad spaces between direct deals and indirect sales channels, while maintaining the publisher's standards for acceptable advertisements. For example, OpenX's ad server considered how many additional ad spaces a publisher had to fill to satisfy the terms of a direct deal. It weighed that

need against the expected value of selling an ad space through an ad exchange (discussed below) or an ad network before deciding whether to allocate an ad space to the direct deal, the ad exchange or the ad network. These allocation algorithms helped publishers maximize revenue. OpenX's ad server also allowed publishers to set their own rules about which advertising demand sources could bid on ad spaces. Recognizing the advantages of OpenX's technology, several major publishers adopted OpenX's ad server, including Southwest Airlines, Business Insider, Groupon and Vox Media.

B. ***OpenX Introduces a Revolutionary Ad Exchange.***

41. OpenX's release of its ad server was only the first step in fulfilling Cadogan and Fairchild's vision: to transform display advertising so that every ad space would be valued competitively and sold separately. This vision, once fulfilled, would separate display advertising from traditional print advertising by bringing to bear the vast advantages online advertising has in terms of data, and the ability to target specific consumers and display ads alongside specific web page content in real time.

42. To realize that vision, in 2009, a year after releasing its enterprise ad server, OpenX launched the OpenX Ad Exchange—the first ad exchange offering real-time bidding into an ad server.

43. **Ad exchanges** are real-time auction marketplaces that connect buyers and sellers of digital ad space on an impression-by-impression basis. Ad exchanges (also called "supply-side platforms", or "SSPs") obtain publisher ad space inventory from ad servers as it becomes available (*i.e.*, as users visit webpages) and make those ad spaces available for advertisers to bid on, in a real-time auction. Advertisers participate in such auctions using ad buying tools, which automate and optimize advertisers' bidding across multiple auctions on multiple ad exchanges, to create an advertising campaign that meets each advertiser's budget and other priorities. The ad

exchange thus connects publishers' supply with advertisers' demand, conducts the auction on each ad space and transmits the winning bid for each ad space back to the ad server. The entire process occurs automatically, before the webpage is displayed to the user along with the attendant ad(s).

44. The development of ad exchanges represented a significant advancement in the digital advertising industry. Exchanges like the OpenX Ad Exchange allowed publisher ad spaces, each of which appears in the context of specific webpage content and is associated with a user who has specific interests in products and services, to be valued individually by advertisers. For example, advertisers could value each ad space based on factors such as publisher quality, ad space quality, user attributes and ad relevance. Ad exchanges thus provided publishers with a way to sell ad spaces individually, more accurately reflecting their value. Given their technical complexity, ad exchanges required significant capital investment. OpenX spent tens of millions of dollars to develop the OpenX Ad Exchange.

45. Ad exchanges like the OpenX Ad Exchange run digital advertising auctions as follows. First, a user visits a publisher's webpage. At that moment, for each ad space that the publisher wishes to display to the user, the ad server sends an "ad request", which contains information about the web property on which the ad will be displayed, the user who may view the ad and the ad space itself, to the ad exchange. The exchange supplements the request with additional information about the user and the website that it may have obtained from other sources and solicits bids from ad buying tools in a real-time auction. In turn, the ad buying tools, based on the information contained in the request and any other information they may have gathered independently about the user and the website, send bid responses back to the exchange. The exchange then closes the auction, determines the winning bid and shares that winning bid

with the ad server. Finally, the ad server evaluates bids from different advertising sources, including ad exchanges and direct deals, decides which ad to serve for the ad space and displays that ad to the user on the publisher's site. Bids that do not meet or exceed the publisher's floor price—the minimum that the publisher is willing to accept for the ad space—are screened out. This entire process occurs in milliseconds, as the webpage loads.

46. The original technical implementation that enabled ad servers to solicit bids from ad exchanges prevented publishers from maximizing the value of their ad spaces. In that implementation, publisher ad servers offered inventory sequentially to one ad exchange or ad network at a time in a so-called **waterfall** process.

47. The waterfall process worked as follows. A publisher ranked ad exchanges based on historical average prices that the exchanges had bid for ad space and entered that information into the publisher's ad server.[4] These historical average bids functioned as price floors—fixed prices that each exchange or network would need to meet to win the ad space.[5] The publisher ad server then offered the ad space to one ad exchange at a time, in a sequential process, starting with the exchange that the publisher ranked first, until it found an exchange that could meet or exceed the price floor assigned to it. Each exchange was asked whether it could meet the price floor and provided a binary "yes"/"no" response. If the highest-ranked exchange failed to "clear" the ad space with a bid that met the price floor set by the publisher, the ad server then passed the ad space to additional exchanges in sequential order, stopping once an exchange met

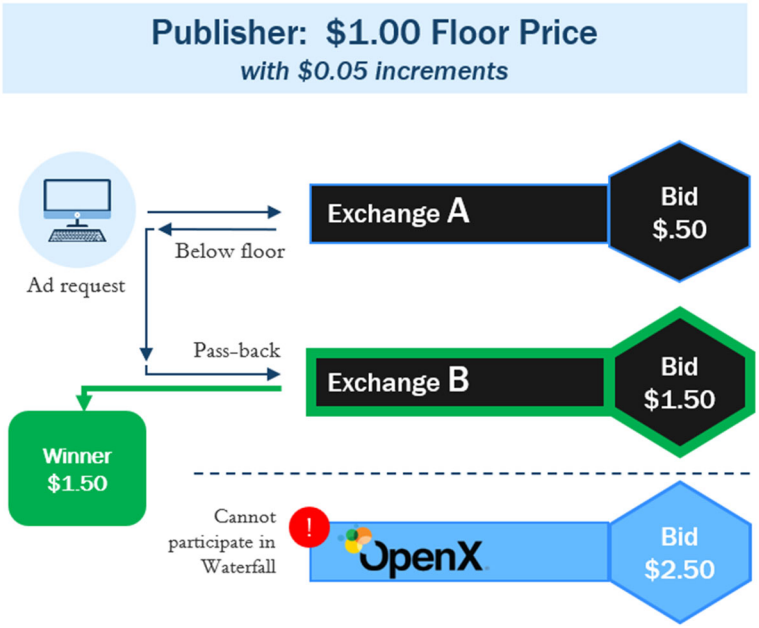
[4] Publishers could also rank ad networks in the waterfall, and many waterfall arrangements included both ad exchanges and ad networks. For simplicity, the waterfall processes described here identify only ad exchanges as the relevant demand sources.

[5] Eventually, many publishers used products called "yield managers" to determine which demand source to call. Yield managers made that decision using predictive algorithms rather than the historical average prices that exchanges had bid for a single publisher's ad spaces.

its price floor and "cleared" the ad space. Once an exchange "cleared" the ad space, the ad server filled the ad space with the advertisement corresponding to the winning bid. Other exchanges lower in the waterfall never had the opportunity to view the ad request or bid on the ad space that it represented—even though they may have had an advertiser willing to pay more for that ad space than the winning bid.

48. Figure 2, below, provides an example of a waterfall auction among three ad exchanges: Exchange A, Exchange B and OpenX. Based on historical bidding data, the publisher ranks the ad exchanges, with Exchange A first, Exchange B second and OpenX third. The publisher in this example sets a price floor of $1.00 for the first exchange in the waterfall, and reduces that floor by $.05 increments, such that the second exchange in the waterfall would face a price floor of $0.95, the third would face a price floor of $0.90, and so on. In the waterfall process, if Exchange A has a maximum bid of $0.50—that is, no bid above the $1.00 price floor it faces—Exchange A would respond "no" to the ad request. The waterfall would then send the ad request to Exchange B, with a price floor of $0.95. If Exchange B's winning bid is $1.50—above Exchange B's price floor—Exchange B would respond "yes" to the ad request, winning the ad space, and the competition for the ad space would terminate. In this scenario, OpenX would never receive the ad request or have the opportunity to submit a bid for the ad space, because it was ranked third in the waterfall (based on average historical prices). So even if OpenX had a significantly higher bid than the $1.50 winning bid from Exchange B—for example, $2.50—OpenX would not win the ad space because of the waterfall system.

Figure 2: The Waterfall Model



49. The waterfall system was inefficient for several reasons. *First*, the ad server received no real-time price signal from any ad exchange, only a binary "yes"/"no" response of whether the exchange had met the relevant price floor. That binary response hindered publishers from realizing the true value of their ad spaces. *Second*, ad spaces were sometimes sold to an ad exchange for less than a rival exchange could have paid—because the first ad exchange that met the price floor filled the ad space even if an exchange ranked lower in the waterfall could have paid more (in the example above, OpenX could have paid $1.00 more than the winning bid, if given the opportunity). *Third*, the process of calling multiple exchanges in sequential order introduced latency into the process of filling an ad space, delaying display of the advertisement and potentially degrading the user's experience on the publisher's web page.

50. In short, because ad exchanges were called sequentially rather than concurrently, and on the basis of static price floors rather than real-time price signals, the waterfall match-making process introduced inefficiencies. Publishers often made less money, and ad

spaces often did not go to the advertisers that valued them the most. OpenX came to recognize these shortcomings of the waterfall system through discussions with its publisher customers.

51. In response, in 2009, following months of development, OpenX introduced **real-time bidding ("RTB")**, which sought to eliminate the inefficiencies inherent in the waterfall process. OpenX's RTB technology represented a paradigm shift in digital advertising. With RTB, for the first time, advertisers received real-time information about each ad request. That information allowed them to value the ad space more accurately and to optimize their bids in light of the unique characteristics of the webpage content and the user they were targeting for an ad. In response, publishers received an instantaneous price signal from an advertiser tailored to each individual ad space and user, as opposed to simply learning whether a given demand source had met its price floor through a binary "yes"/"no" response. RTB therefore allowed the publishers to consider the price of the winning bid from the OpenX Ad Exchange for a specific ad space and compare it in real time against other demand sources, such as direct deals, *before* deciding which source would fill the ad space.

52. RTB has become the standard for how most indirect sales are completed in digital advertising. Following OpenX's development of RTB, publishers were no longer required to allocate inventory solely on the basis of predicted bids from ad exchanges, which could be inaccurate. Instead, they could consider the winning bid from a real-time auction among advertisers before deciding how to fill a given ad space. OpenX's RTB technology provided publishers with much more information about the value of their ad spaces and significantly increased publisher revenues. For example, a publisher using the OpenX ad server could compare a real-time bid from the OpenX Ad Exchange against the price at which the same ad space would be sold if it were included in a direct deal, which maximized the chances that each

ad space would be sold at the highest possible price. In short, OpenX's RTB allowed publishers to more properly value their inventory at the level of the individual ad space. OpenX's RTB technology has been integrated into the OpenRTB protocol, a standard that is now used across the digital advertising industry, including by Google.

53. When OpenX publicly introduced its ad exchange product in April 2009, OpenX's ad server became the first ad server to obtain real-time bids on ad spaces from an ad exchange. OpenX's ad server also provided publishers with maximum flexibility: they could freely determine the order of demand sources in their waterfall and choose to include the OpenX Ad Exchange either as a source of real-time bids or as a source called using a static price floor (*i.e.*, one that is based on historic price information). OpenX hoped that by providing its ad server customers the unique opportunity of access to real-time bids from an ad exchange, its ad server would thrive in the marketplace. Around this time, a senior Google executive wrote privately to other Google employees: "[W]e need to take [OpenX] even more seriously than the other exchanges / yield managers that are gaining traction out there".

III. Google Amasses Monopoly Power Across the Ad Tech Stack.

54. While OpenX was setting out to revolutionize the industry through innovation, Google sought to monopolize the ad tech stack through a series of acquisitions and anticompetitive conduct.

A. *Google Leverages Its Search Advertising Monopoly To Create a Dominant Ad Buying Tool for Small Advertisers.*

55. Google launched its flagship search product, Google Search, in 1998. That product rapidly became the world's most popular tool for retrieving information. Google Search offered "a unique opportunity for advertisers to place digital ads that matched precisely what an Internet user was looking for at that moment". Liability Op. at 24. Thus, in 2000, Google began

offering advertisers an ad buying tool called AdWords,[6] which initially enabled advertisers to place advertisements alongside Google search results. For many years, Google has had a monopoly over both the general search services market and the market for general text advertising, as recently confirmed in *United States v. Google LLC*, 747 F. Supp. 3d 1, 187 (D.D.C. 2024). Given Google's dominance in search advertising, AdWords controlled an enormous pool of advertiser demand. By 2007, AdWords had over one million advertiser customers.

56. Google harnessed this massive source of advertising demand to expand AdWords beyond search advertising to handle display advertising as well, thereby allowing AdWords advertisers to place ads on third-party websites. Because AdWords is primarily intended for and used by small and relatively unsophisticated advertisers, such advertisers typically cannot, or do not, want to split their advertising campaigns among multiple ad buying tools, opting instead to exclusively use AdWords as a one-stop-shop for their online advertising needs. By 2022, four million advertisers were using AdWords exclusively, and AdWords purchased over 45% of worldwide open-web display impressions that were not transacted through direct deals. Since AdWords exclusively aggregates and controls unique advertiser demand, access to AdWords demand is a "must have" for many online publishers, particularly those that rely on smaller advertisers.

[6] AdWords is now known as Google Ads. The channel within AdWords to purchase display advertising space is referred to as the "Google Display Network" or "GDN", and the ad tech industry often uses these terms synonymously with AdWords.

B. *Google Acquires the Industry-Leading Ad Server (DFP) and a Nascent Ad Exchange (AdX).*

57. To leverage the growing dominance of AdWords, Google needed a way to connect AdWords advertising on the buy side with publishers on the sell side. Google recognized that publisher ad servers set the rules for how and to whom ad inventory is sold, ultimately influencing how publishers value their inventory and assess the ad exchanges bidding on that inventory. Google therefore sought to enter the ad serving market by developing its own publisher ad server. However, recognizing the technological and competitive challenges posed by such development, Google quickly abandoned these efforts and—instead of developing an innovative product that would compete in the market to gain traction—used its financial might to acquire the leading incumbent publisher ad server. In 2008, Google completed an acquisition of DoubleClick. At the time of that acquisition, DoubleClick's ad server DFP already served roughly 60% of display ads (as measured by revenue) and was used by nine of the top ten U.S. publishers.

58. Google internally valued DoubleClick's business at between $1.8 billion and $2.2 billion. Nonetheless, Google agreed to buy DoubleClick for $3.1 billion—an overpayment of approximately $1 billion. Liability Op. at 26. Internal Google documents reveal that Google overpaid for DoubleClick to obtain control over a vital chokepoint in the ad tech stack—the most widely used ad server on the market. Google recognized that "the most important thing in display is having access to the right inventory", so "the most strategic battle is about the publisher platform". As this Court has found, through its purchase of DFP, "Google was able to keep the sell-side control that DFP offered out of the hands of Microsoft, Yahoo, and other digital advertising rivals", and ultimately to "establish a dominant position on both sides of the ad tech stack". Liability Op. at 27.

59. As part of the DoubleClick acquisition, Google also obtained AdX, a nascent ad exchange. AdX was integrated with DFP in a manner that allowed DFP to dynamically select the winning bid from the ad exchange when it offered a greater yield than a direct deal. Despite that integration, at the time of the acquisition, AdX ran auctions using only static bids—not real-time bids. In September 2009, six months after the OpenX Ad Exchange had launched with real-time bidding, Google relaunched the AdX ad exchange it had acquired from DoubleClick as AdX 2.0, incorporating the real-time bidding innovation that OpenX had pioneered.

C. *Google Creates Interlocking Anticompetitive Ties Between the Three Levels of Its Ad Tech Stack.*

60. Google internal documents show that Google "[d]idn't buy DCLK [DFP] for the revenue (& growth) – [Google] bought it for enabling the [Ad] Exchange". In other words, Google acquired the industry-leading ad server so that it could exploit that ad server to build a monopoly in the ad exchange market. Google employees noted internally that if Google were to "lose [publisher ad server] platform share, [Google could] build the best GCN [AdWords] in the world but [would] still be at a severe risk of being disintermediated if Y[ahoo] [or] M[icrosoft] own the tag on the publisher page".[7] Google thus recognized the value of a dominant publisher ad server as the foundation of a "virtuous cycle" in which "more pub[lisher]s from DFP mean more attractive to advertisers" and "more advertisers mean more desire for pub[lisher]s to get on DFP". As this Court has found, "Google's ad tech business thus benefited from network effects, as the more advertiser customers Google had, the more publishers wanted to use DFP, and the more publisher customers Google had, the more advertisers wanted to use Google's buy-side services, thereby creating a self-reinforcing positive feedback loop". Liability Op. at 27.

[7] A "tag" is the code inserted into a publisher's webpage that contains information about an ad space to be filled and sends a request to a specific ad server to fill the ad space.

61. Following the acquisition of DoubleClick, as further explained below, Google deployed a "three pillar" strategy—Access, Aggregate, Monetize—to "protect our [DFP's] position" as the dominant "operating system for publishers globally": (i) Google required use of its publisher ad server "[p]latform to ACCESS the desired inventory"; (ii) Google used its "Ad exchange to AGGREGATE that inventory that the platform piece gives"; and (iii) Google forced advertisers on the "Google Content Network [AdWords] to MONETIZE the inventory [Google] aggregate[s] via [Google's] Ad Exchange". This three-pillar strategy cemented Google's monopolies up and down the ad tech stack, built a moat around these monopolies and foreclosed OpenX—both in the ad server and in the ad exchange markets—from effectively competing with Google, to the detriment of publishers and advertisers alike. As this Court described it, "Google's bolstering of its publisher-facing business through the DoubleClick acquisition helped it establish a dominant position on both sides of the ad tech stack". Liability Op. at 27.

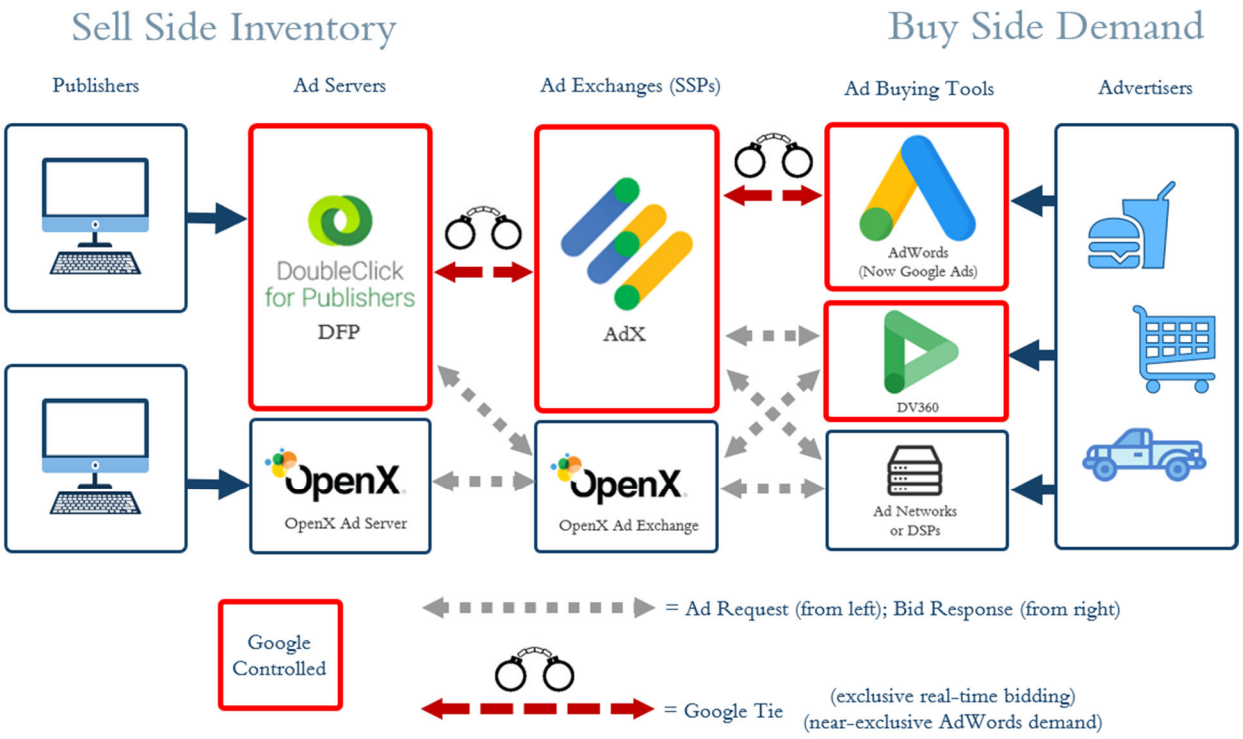
62. To execute on its three-pillar strategy, when Google launched AdX 2.0 in September 2009, Google interlocked the three levels of its ad stack through the introduction of two separate tying arrangements that compelled publishers to use DFP and AdX to obtain advertiser demand from AdWords. As the Court has found:

> After acquiring DoubleClick, Google implemented two policies that incentivized both advertisers and publishers to use AdX. First, with limited exceptions, Google made AdX the only ad exchange into which AdWords advertising demand was permitted to bid. Second, Google required publishers to use DFP as their ad server if they wanted to access real-time bids from AdX.

Liability Op. at 28. Through these ties, Google essentially locked publishers into using DFP and AdX. Google then exploited its control over AdWords and DFP to install itself as the seller, buyer and auction house of a significant proportion of display ads transactions. Figure 3 below shows a version of the ad tech stack (similar to Figure 1, *supra* ¶ 23) but with the key Google

platforms operating within that stack: Google's ad buying tool (AdWords, now called Google Ads), its demand-side platform (DV360),[8] its ad exchange (AdX) and its publisher ad server (DFP).

Figure 3: The Ad Tech Stack: Google's Dominance



i. ***Google Thwarts Competition by Tying AdWords Demand Exclusively to Its Own Ad Exchange (AdX).***

63. Since 2009, Google has funneled nearly all AdWords open-web display demand through AdX, thereby requiring publishers to use AdX if they wish to access AdWords' massive and unique buyer demand.

64. As this Court has found, "AdWords was a singularly powerful source of digital advertising demand". Liability Op. at 28–29. By funneling AdWords demand through AdX, Google leveraged the unique advertiser demand that it controls to make AdX a "must have"

[8] Demand-side platforms and DV360 are described further below. *See infra* ¶ 112.

source of demand *for publishers*. At the same time, Google's restriction denied the OpenX Ad Exchange and other rival ad exchanges from gaining scale, as they were not able to provide publishers with access to almost any demand from AdWords, the largest source of digital advertising demand in the world.

65. Google's decision to funnel nearly all AdWords demand through AdX was harmful to AdWords' own customers. Google effectively blocked AdWords' advertiser customers from buying inventory through non-Google ad exchanges, even if those competing ad exchanges offered higher quality inventory or lower prices. Google's internal documents acknowledge as much. For example, Google's internal documents demonstrate that its restriction "is purely a decision to hold back a set of advertisers [AdWords customers] in order to promote [AdX]". A Google employee explained Google's strategy: "[W]e appear to be running a buyside-subsidizes-sellside model: we are artificially handicapping our buyside (GDN [AdWords]) to boost the attractiveness of our sellside (AdX). Specifically, we have chosen to limit GDN buying only on AdX, an exclusivity that only makes AdX more attractive to sellers."[9]

66. As this Court has already found:

> A primary source of Google's monopoly power in the ad exchange market is AdWords' uniquely large and diverse array of advertising demand . . . . By effectively restricting the unique advertising demand offered by AdWords advertisers to AdX, Google has ensured that publishers would lose significant revenue if they did not use AdX.

Liability Op. at 96.

[9] In 2015, Google launched AdWords Cross Exchange Bidder (AWBid), which slightly relaxed Google's total ban on AdWords bidding for inventory on third-party ad exchanges. But "[b]ecause AWBid focused on a small set of impressions related to specialized advertising campaigns, AdX remained the 'nearly exclusive' source of AdWords demand". Liability Op. at 28 n.15.

ii. ***Google Thwarts Competition by Tying Real-Time Bids from AdX to Its Own Ad Server (DFP).***

67. Since 2009, Google also has tied real-time bids from AdX to use of its publisher ad server DFP, creating a multi-level tie of its products across the ad tech stack.

68. Google imposed this second tie by refusing to provide access to real-time bids from AdX to publishers using rival ad servers. If a publisher opted to use another ad server—for example, OpenX's ad server—the publisher would lose the ability to obtain real-time price signals from AdX and, as a result, from AdWords' massive demand.

69. Instead of real-time bids, a publisher using a non-DFP ad server, like OpenX's ad server, could only offer an ad space to AdX using a static price floor through an AdX Direct tag. AdX would then provide a binary "yes"/"no" response and fill the ad space only if it could meet the price floor. As one internal Google document explained, "AdX does not pass through real-time bids to . . . other ad servers (instead it passes through a 'dumb' flat CPM based on historical averages)". Therefore, publishers using non-Google ad servers could not obtain real-time bids from AdWords demand, nor could they obtain real-time bids from non-AdWords demand flowing through AdX. Google fully understood that publishers using competing ad servers were denied access to important data about advertisers' valuation of their inventory, as well as the opportunity to maximize the price of their inventory through real-time auctions.

70. This Court has found that Google's non-real-time AdX Direct product was "not an 'economically viable substitute to accessing AdX through DFP' because it had rudimentary functionality, did not show the price that AdX was offering, did not provide access to real-time bids, increased latency, and did not permit publishers to place bids from AdX into real-time auctions with bids from other exchanges". Liability Op. at 28 n.16.

71. By requiring publishers to use DFP to access real-time bids from AdX, and by funneling nearly all AdWords demand through AdX, Google has locked publishers into using both its AdX and DFP products. As one Google employee wrote, "AdX can serve as a tool to pull publishers onto [D]FP". In other words, as explained by one Google executive, "the glue that seals DFP to GCN [AdWords] is AdX". Google further recognized that the "value of Google's ad tech stack is less in each individual product, but in *the connections across all of them*".

72. Google's plan worked. Publishers were unable to forgo the valuable AdWords demand that was effectively only available to DFP customers. Multiple major newspaper publishers indicated that their hands were tied; even if they were unhappy with DFP, they could not switch to a competing ad server because that would mean they would lose access to AdWords demand and thereby experience a massive revenue loss. As this Court has found, "[o]pen-web publishers were therefore stuck using DFP, even if they would have preferred to use a different publisher ad server". Liability Op. at 94. Google's ties prevented other ad servers from gaining customers and scale.

73. As one of the few companies offering a competing ad server, OpenX suffered particular harm from the two ties that Google imposed on publishers. OpenX's ad server lacked effective access to most of the unique and valuable advertiser demand aggregated through AdWords and to any real-time bids from AdX. Without this critical access on the buy side, OpenX could not compete effectively with Google's ad server, DFP, for publisher customers on the sell side. Even though some publishers indicated that they preferred OpenX's ad server—including OpenX's ability and willingness to customize its ad server product to meet publishers' needs—publishers could not afford to lose the AdWords demand that was available only through

DFP. *See* Liability Op. at 29. As a result, OpenX struggled to win new publisher ad server clients and lost prospective and existing clients to DFP. OpenX thus was forced to reduce its investment in its ad server and ultimately, in 2019, to shut it down altogether.

74. Google's tying of real-time demand from AdX to publishers' use of DFP was anticompetitive. As this Court has found, "[b]y forcing Google's publisher customers to use a product they would not necessarily have otherwise used, by making it difficult for rival publisher ad servers to compete on the merits, and by significantly reducing rivals' market share, the tying of DFP to AdX has had a substantial anticompetitive effect in the publisher ad server market for open-web display advertising". Liability Op. at 98.

D. ***Google Employs Dynamic Allocation To Exploit Its Monopolies.***

75. In addition to ensuring that publishers were locked into using its ad server and ad exchange, Google altered the waterfall process for publishers using DFP by requiring publishers to prefer AdX over all other demand sources. Google transformed the publisher-controlled waterfall, in which each bidder had acted independently, into a sequence in which AdX, and AdX alone, learned its competitors' predicted bids *and* was then given the opportunity to bid first—a **First Look** at inventory. This rigging of the waterfall allowed AdX to outbid any potential rival demand sources before they even had an opportunity to participate. Google's First Look manipulation allowed AdX to cherry pick the most valuable ad requests, which rival exchanges would never even see because Google could bid—and win—before those ad requests ever were offered to other ad exchanges.

76. Before Google acquired DoubleClick, the DFP product served the interests of publishers by giving them more informational control over their auctions. To take one example, DFP allowed publishers to take the unique user IDs that it assigned to website visitors and share those IDs with ad exchanges and ad buying tools to improve user identification and tracking.

That sharing allowed ad tech tools—even those not owned by DoubleClick—to identify the best matches between advertisers and publishers, leading to higher publisher revenue. But after Google acquired DoubleClick, Google reconfigured DFP to prohibit publishers from sharing DFP-assigned user IDs with non-Google ad exchanges and ad buying tools. That restriction made it harder for non-Google tools, like the OpenX Ad Exchange, to identify users and achieve the best match between a user and an advertiser. Meanwhile, DFP continued to share user IDs with AdX, enabling AdX to identify better matches and bid more for publisher inventory.

77. Google was able to cherry pick the most valuable ad requests by employing a mechanism known as "Dynamic Allocation". Under Dynamic Allocation, Google preferred AdX over non-Google ad exchanges within DFP by giving AdX an exclusive first right of refusal—aptly called First Look—for each ad space offered by DFP, regardless of AdX's historical bids or the publisher's placement of AdX in the waterfall. Dynamic Allocation thus gave AdX the First Look at all inventory flowing through DFP. This meant that AdX did not have to compete with other ad exchanges on the merits for a higher position in the waterfall. Instead, Google provided AdX an exclusive First Look ahead of all other ad networks and ad exchanges, such as the OpenX Ad Exchange. In fact, "AdX received a First Look at DFP impressions even if the publisher preferred other exchanges and wanted to rank them first". Liability Op. at 30.

78. Google also configured DFP to share with AdX the predicted bids or price floors that publishers assigned to every other ad exchange and ad network in the waterfall, providing AdX with the opportunity to bid against each of these price floors (which declined sequentially down the waterfall). Notably, the price floors for other ad exchanges were based on static, historic bids and therefore did not reflect any real-time information about the value of the

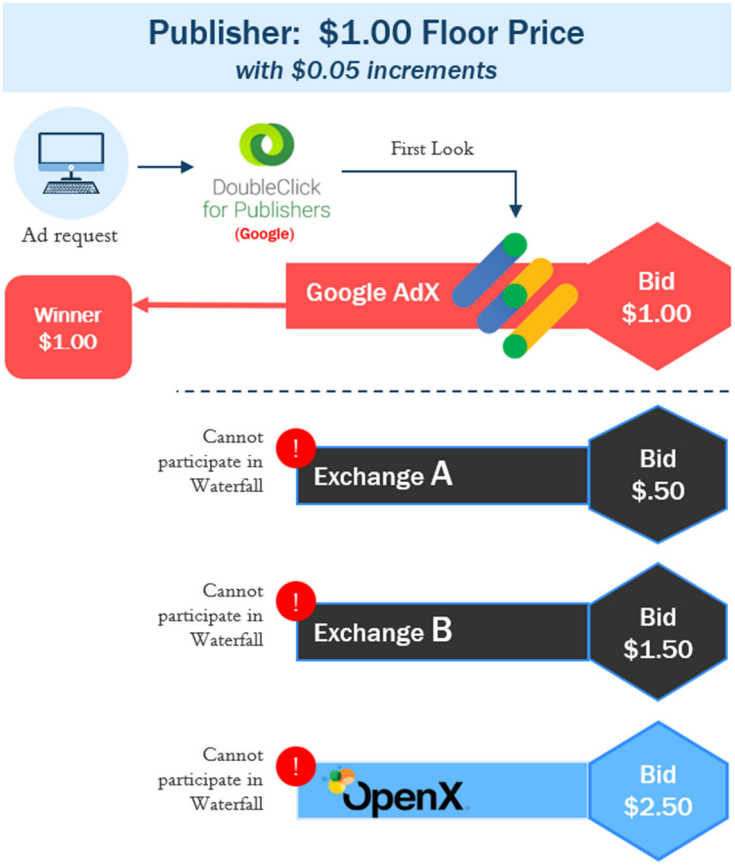
specific ad space. Under Dynamic Allocation, the highest predicted bid for a non-AdX demand source in the waterfall was passed to AdX as a price floor. AdX would then run a real-time auction before the ad request reached any other demand sources. If any AdX buyer submitted a real-time bid that was higher than the highest predicted bid—which, again, AdX was told in advance—AdX would win the ad space. If not, the ad space would be offered to the first non-AdX demand source in the waterfall. If that top-ranked demand source could not meet the publisher's price floor, then the process would repeat. AdX would win the ad space if its bid was higher than the predicted bid for the second-highest demand source in line; if not, the ad space was offered to that demand source, and so on. Thus, AdX would have a full view of both real time information about the ad request *and* the predicted bids of all other demand sources in the waterfall, whereas other ad exchanges would not even receive the ad request, let alone have the opportunity to bid on it, unless AdX did not win the ad space before the request reached that exchange in the waterfall. By receiving more ad requests and winning more ad spaces, AdX had the opportunity to see, and learn from, far more ad requests than did any other ad exchange.

79. Under Dynamic Allocation, AdX benefited from real-time information about the value of the ad space while other exchanges—which were assigned priority and price floors on the basis of static, historical bids—did not. Other exchanges did not benefit from this information because DFP refused to allow any ad exchange other than AdX to bid in real time. Google refused to integrate real-time competition from rival ad exchanges into DFP to further insulate AdX's growing position in the ad exchange market, despite knowing that more real-time competition would have increased publisher revenues and overall market efficiency. For example, when OpenX asked Google to allow OpenX to integrate real-time bids from the OpenX

Ad Exchange into DFP, Google rejected OpenX's proposal, even though doing so would have increased publisher revenues by bringing more real-time competition.

80. Figure 4, below, provides a simplified example of Google's First Look. It shows the same waterfall setup from Figure 2 (*see supra* ¶ 48), but adds AdX. AdX's competitors—Exchange A, Exchange B and OpenX—cannot submit real-time bids into DFP, not because of any meaningful technological barrier, but rather because DFP does not accept real-time bids from them, relegating them to the legacy static waterfall process reflected in Figure 2. Further, under First Look, DFP places AdX first in line and asks AdX to meet the predicted bids of the other exchanges, but based on an information-rich, real-time bid. In this example, Exchange A has a predicted bid of $1.00, which becomes a price floor for AdX to beat. AdX can win the ad space right away by simply matching the price floor of $1.00. Or, if AdX cannot beat the price floor from Exchange A, and Exchange A does not clear the price floor either, then AdX will be given another opportunity to beat Exchange B's price floor of $0.95. And AdX can win with a $1.00 bid (or a $0.95 bid, etc.) even if OpenX could have bid much higher, such as $2.50.

Figure 4: Google's First Look



81. This Court recognized that First Look provided AdX with an unfair advantage and deprived publishers of revenue:

> The First Look functionality benefited AdX advertisers, as they could win the auction even when advertisers using rival ad exchanges were willing to pay a higher price for the impression (i.e., when bids from other exchanges offered publishers more revenue for the impression). . . . [U]nder First Look, advertisers using AdX could win the auction even if they did not offer the highest revenue for the impression. This inherent inefficiency limited the ability and incentive for advertisers using other ad exchanges to compete on price, and resulted in publishers not obtaining the maximum value for their impressions.

Liability Op. at 30 (citations omitted).

82. In effect, because AdX alone had the ability to assess the value of an ad space in real time while all other exchanges competed on the basis of outdated, historic bids, Dynamic

Allocation gave AdX the opportunity to cherry pick the most valuable ad spaces for itself and left other ad exchanges, such as OpenX, to fight over the proverbial scraps.

83. Over time, Dynamic Allocation and AdX's ability to cherry pick ad spaces led to a vicious cycle in which publishers were forced to transact more of their inventory (especially their highest-value inventory) with AdX. In turn, only the less valuable ad spaces would proceed down the waterfall and be offered to other ad exchanges like the OpenX Ad Exchange, which lowered the average prices at which those exchanges won ad spaces. Publishers therefore lowered the predicted bids for those other exchanges in the waterfall, in turn lowering the price floor at which AdX could win ad spaces away from these exchanges. That made it even easier for AdX to win ad spaces by beating those lowered static bids for other exchanges, thereby reinforcing AdX's competitive advantage. Conversely, without the opportunity to bid on and win as many ad spaces, the OpenX Ad Exchange had less auction data, thereby hindering its ability to optimize its bids for future ad spaces. Even when the OpenX Ad Exchange distinguished itself from others in the industry by strictly controlling for publisher and advertisement quality, it still could not compete effectively against Google because of Google's anticompetitive advantages from the ties and Dynamic Allocation.

84. Google executives have recognized the unfair advantage that Dynamic Allocation gave AdX over other ad exchanges. In one internal document, a Google executive noted that First Look "made it difficult for [rival ad exchanges] to compete on a level playing field with AdX". As this Court has found, First Look "thereby imped[ed] their ability to enter the market, grow, and compete". Liability Op. at 31. In addition, as this Court recognized, by diverting transactions from rival exchanges to AdX, "First Look also gave Google a data advantage that helped the AdX team train its auction bidding models more effectively" than rivals like the

OpenX Ad Exchange. *Id.* Google's conduct ultimately deprived the OpenX Ad Exchange of the scale and revenue needed to compete effectively against Google.

85. This Court has held that First Look, in which Google used "its monopoly power to impose artificial technical limitations that made it harder for customers to do business with rivals", "constituted anticompetitive conduct". Liability Op. at 99. First Look had pernicious effects: it "resulted in less revenue for publishers, fewer impressions going to the advertisers who were willing to pay the most for them, enhanced AdX market power, and reduced competition in the ad exchange market". *Id.* at 108.

IV. OpenX Tries To Overcome Google's Anticompetitive Conduct by Launching Header Bidding.

86. Google's restrictive and anticompetitive conduct harmed publishers, competitors and advertisers alike. Even Google's own employees recognized, for example, publishers' "frustration that Google's ad tech products would not allow them to reach out to more than one exchange for simultaneous realtime auctions of their inventory".

87. After numerous discussions with publishers about their concerns with DFP, OpenX recognized an opportunity to introduce additional competition into the market through an innovation that would allow publishers to mitigate some of the effects of Google's anticompetitive restrictions.

88. In 2013, OpenX introduced a new technology called **header bidding**, which allowed real-time competition among ad exchanges for ad space, "negating Google's First Look advantage". Liability Op. at 33. OpenX led the market in developing header bidding and obtained several patents related to header-bidding technology.

89. Header bidding allowed publishers to "inject" a real-time bid from the OpenX Ad Exchange into Google's ad server. It worked as follows:

(i) the publisher would include a specific string of code in the header of its webpage;

(ii) upon a user launching the webpage in their browser, the code would solicit bids for a given ad space on that webpage from the OpenX Ad Exchange (without involving Google's ad server);

(iii) the OpenX Ad Exchange would run an auction for that ad space and submit the winning real-time bid directly to the publisher;

(iv) the code on the publisher's webpage would then "inject" that winning bid from the OpenX Ad Exchange auction as a real-time price floor into Google's ad server; and

(v) AdX would then need to beat that real-time price floor to win the ad space.

Header bidding effectively placed another real-time bid in competition with the real-time bid from AdX, creating a fairer and more competitive marketplace for the inventory of publishers that used DFP. Because AdX was forced to compete against a real-time bid as opposed to a static price floor, publishers obtained much higher bids that better reflected the true value of their inventory.

90. Publishers were quick to adopt header bidding because its effects were immediate and staggering; header bidding allowed publishers to increase their revenues by 20%–100% overnight by simply adding code to their websites that forced AdX to compete against a real-time bid from the OpenX Ad Exchange.

91. Early results of header bidding at OpenX were "spectacular". One publisher remarked that "[q]uite simply, [header bidding] worked. We've seen such high CPMs that it's like [OpenX] Bidder is our 2nd most successful salesperson." Another publisher whose revenue increased over 50% said that it "found the implementation of the OpenX [header bidding solution] to be efficient and effortless and the results very rewarding".

92. After recognizing the spectacular results from OpenX's header bidding solution, other ad exchanges began to offer their own versions of header bidding. As a result, publishers could solicit real-time bids from multiple ad exchanges, each holding its own independent auction. The code on the publisher's webpage would then inject the highest winning bid among all participating exchanges into DFP as the real-time price floor for AdX to beat.

93. Because header bidding allowed publishers to obtain real-time bids from ad exchanges before Google could provide its own ad exchange with an unfair First Look, header bidding forced AdX to compete on a more level playing field with its rivals. Moreover, because header bidding allowed non-AdX exchanges to conduct real-time auctions before AdX got its First Look, header bidding also let non-Google exchanges see and bid on far more inventory, not just the scraps that AdX had rejected.

94. Header bidding allowed multiple exchanges to see every ad request a publisher offered and to bid simultaneously for that ad request. This was an immense improvement over Dynamic Allocation and First Look. The increased flow of information allowed rival ad exchanges to better understand the full spectrum of available inventory and optimize their bidding over time, increasing their bids where appropriate. The price at which an ad space sold was now based on real time bids from more—and better informed—exchanges, and was therefore much more likely to approximate the inventory's true value. All told, header bidding increased competition and led to a dramatic increase in the revenues collected by publishers that chose to use it.

95. Industry participants recognized header bidding as a revolutionary breakthrough. It is sometimes characterized as a "workaround", Liability Op. at 33, or a "hack" that could mitigate some of the barriers erected by Google. Those characterizations reveal an important

fact: By the time OpenX introduced header bidding in 2013, Google had rigged the ad tech stack to favor AdX to such an extent that OpenX could introduce a measure of greater competition only by partially circumventing Google's unfair policies and programs, such as First Look.

96. Header bidding's success, and the scale it provided to competing ad exchanges, posed a meaningful competitive threat to Google's dominance. An internal Google email summarized header bidding's competitive effect as follows: "Publishers felt locked-in by dynamic allocation in DFP, which only gave AdX ability to compete, so HB [header bidding] was born." In addition, Google recognized internally that "per-query bids from exchanges dramatically increases yield, so pub[lisher]s are clamouring for this functionality" and that "[o]ver[]time, other demand sources did not feel it was fair that AdX was given unique treatment in DFP. This led networks and subsequently exchanges to develop the ability to submit near real-time prices to DFP (and other ad servers) to inform ad serving logic via the technology called header bidding. This has also led to significant yield improvements for pub[lishers]."

97. Header bidding also benefited advertisers because it made it more likely that the highest advertiser bid would win the ad space, regardless of ad exchange. This adjustment greatly improved advertiser-publisher match quality over the waterfall process in which AdX, through First Look, could win any ad space simply by beating the static, predicted bid of rival exchanges.

98. To be sure, header bidding was not a panacea. Even with header bidding, the OpenX Ad Exchange was still fighting an uphill battle against AdX. Google still funneled the captive pool of AdWords advertiser demand almost exclusively through AdX, and, as detailed below, Google still used DFP to provide AdX with an informational advantage and a unique ability to bid last. Nonetheless, header bidding allowed OpenX to quickly grow its business.

The OpenX Ad Exchange's market share rose significantly from 2014 to 2015, and revenues grew 40% from $100 million in 2014 to $140 million in 2015.

99. Google steadfastly fought the innovation of header bidding and the threat it posed to Google's chokehold over the ad tech stack. Google fully recognized that header bidding was a market reaction to its own anticompetitive conduct: "The header ecosystem relies on our unwillingness to open our systems to the types of transactions, policies, and innovations that buyers and sellers wish to transact." But rather than allow these "transactions, policies, and innovations" that its "buyers and sellers wish[ed]" to enjoy, Google sought to negate the procompetitive effect of header bidding—and, as further detailed below, sought to destroy OpenX and others who promoted header bidding in an anticompetitive campaign to protect AdX's dominance.

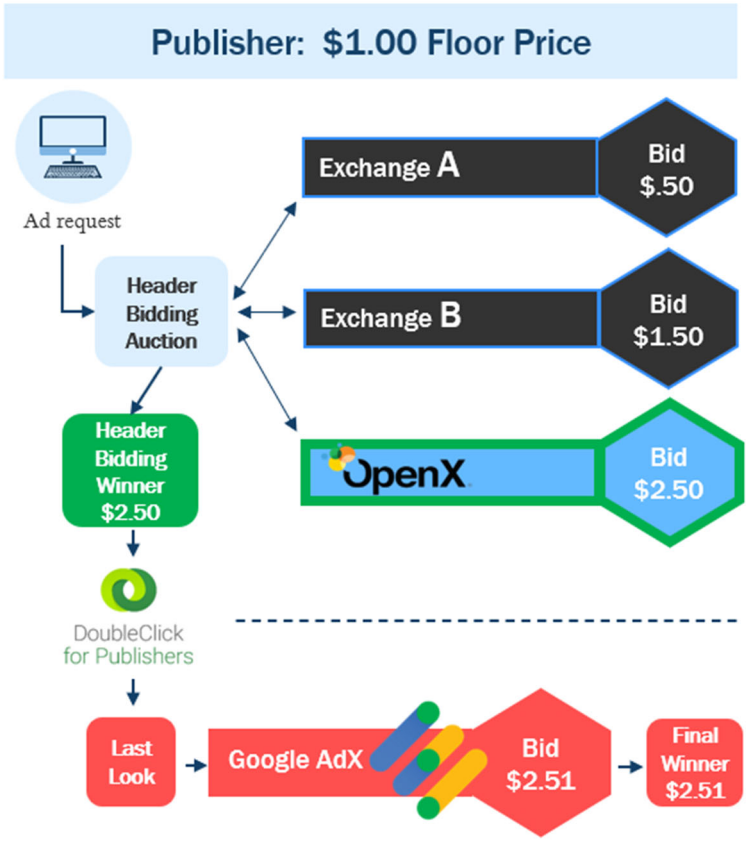
V. Google Maintains an Unfair Auction After Header Bidding with Last Look and Sell-Side Dynamic Revenue Share.

100. Following the launch of header bidding, Google maintained an advantage over competing ad exchanges through Dynamic Allocation. Specifically, for ad spaces that were the subject of header bidding, Dynamic Allocation replaced AdX's First Look with a **Last Look**. When a publisher using DFP sent ad spaces to a header bidding auction, the publisher still had to inject the winning bid from that header-bidding auction into DFP as a price floor. At that point, DFP informed AdX of the winning bid and allowed AdX—and AdX alone—a last chance to outbid the winner of the header-bidding auction.[10]

[10] As with First Look, DFP's internal logic still called AdX first under Last Look. The difference was that AdX now competed "last" against the winning bids from the header bidding exchanges, who had already run their own auctions and submitted real-time bids to the publisher.

101. Figure 5, below, provides an example of Google's Last Look. Similar to the examples of the waterfall from Figure 2 (*see supra* ¶ 48) and First Look from Figure 4 (*see supra* ¶ 79), in this example three ad exchanges—Exchange A, Exchange B and OpenX—participate in the header bidding auction. The winning bid among those three exchanges is from OpenX at $2.50. That "winning" bid from OpenX is injected into DFP, and AdX is then given the opportunity to bid on the same ad space. But whereas Exchange A, Exchange B and OpenX performed their auctions and put in their bids with no line of sight into each other's bids, DFP provided OpenX's winning bid to AdX as a price floor (*i.e.*, the price AdX would have to beat to win the ad space). Thus, in the example here, AdX could see the price of the "winning" bid of $2.50 and choose whether to bid $2.51 (or more) to win the ad space or decline to do so.

Figure 5: Google's Last Look



102. By using Last Look, AdX could beat any winning bid from the header bidding auction, including a bid from the OpenX Ad Exchange, by offering one cent more for the ad space. In essence, AdX could see the results of the otherwise sealed header bidding auction—involving all other market participants—and adjust its bid to win the ad space at the lowest possible cost. Google again exploited its ability to share information between DFP and AdX to provide AdX with an unfair advantage in bidding, while OpenX and other competitors were forced to bid blindly. As this Court has found, "[b]eing able to view its competitors' bids provided Google and its advertising customers with a significant informational advantage that significantly disadvantaged other competitors in the ad exchange space". Liability Op. at 35 (cleaned up).

103. Last Look created an unfair competitive advantage for AdX, allowing it to win transactions away from competitors despite the introduction of competitive real-time bids from other exchanges through header bidding auctions. Thus, even with the advent of header bidding, Dynamic Allocation still funneled transactions away from rival ad exchanges to AdX. This conduct deprived the OpenX Ad Exchange of the scale and revenue needed to compete more effectively against Google. Like its First Look predecessor, the Court concluded that "Last Look was another anticompetitive policy that entrenched Google's monopoly power, disadvantaged Google's publisher customers, and harmed the competitive process". Liability Op. at 99. Last Look "harmed publishers, rival ad exchanges, and advertisers using non-Google ad buying technologies". *Id.*

104. Last Look also allowed Google to manipulate auctions to ensure AdX continued to win the most ad spaces and, in particular, to cherry pick the most valuable ad spaces. One mechanism Google used to that end was a program called **Sell-Side Dynamic Revenue Share**

("SSDRS"). In header bidding, ad exchanges—including AdX—won ad spaces by submitting the highest net bid—the gross bid offered by the advertiser less any fee charged by the exchange. Under SSDRS, Google allowed AdX to alter its take rate—the percentage fee it charged—on an ad-space-by-ad-space basis. Thus, AdX could change the take rate it would charge on a transaction *after* seeing the highest bid from a competing exchange. In this way, Google could reduce its take rate in competitive circumstances in which a third-party exchange submitted a competitive bid in the header bidding auction, allowing AdX to increase its net bid just enough to exceed the winning bid from the header-bidding auction and win the ad space. Google thus could ensure it won more ad spaces—and more of the most valuable ad spaces—by constantly manipulating its take rate. Publishers therefore sold their most lucrative ad spaces through AdX, making header bidding exchanges appear to be less effective to publishers and advertisers than they would have been absent SSDRS.

105. Continuing the example of Last Look in Figure 5 (*see supra* ¶ 101), Google could use SSDRS to beat OpenX's bid of $2.50. Because AdX knows from Last Look that the price to beat for the ad space is $2.50, it could manipulate its net bid to outbid the OpenX bid of $2.50. As an example, if an AdX advertiser was willing to pay $3.00 for the ad space, that bid would typically translate to an AdX bid of $2.40, net of Google's 20% take rate. However, Google could use SSDRS to lower its take rate in this example from $0.60 to $0.49, thus submitting a winning bid of $2.51 and outbidding OpenX's bid of $2.50. AdX would then make up the $0.11 difference by charging a higher take rate in less competitive auctions in which its net bid was already above the price floor (for example, by presenting a $3.00 advertiser bid as a net bid of

$2.29 in an instance where it had to beat a bid from header bidding of $2.25, pocketing an extra $0.11 above its standard 20% take rate).[11]

106. On information and belief, Google concealed SSDRS from publishers, advertisers and other ad exchanges. Starting in 2014, Google began opting its publishers into SSDRS without disclosing anything about the program to publishers or advertisers. By the fall of 2015, Google had opted all its publishers into the program without disclosing any information about it. Then, in the summer of 2016, Google told publishers it was launching a "revenue share-based optimization" that increased publishers' yields. Although Google was referring to SSDRS, Google's description of the program to publishers was false because SSDRS did not increase publishers' yields. Publishers were not told that AdX recouped any lost revenue from ad spaces on which SSDRS lowered AdX's take rate by charging a higher AdX take rate on other ad spaces. On top of that, because DFP concealed non-winning bids from publishers, publishers were unable to discover Google's auction manipulations.

107. SSDRS leveraged Google's ownership of DFP to further exacerbate the effects of Last Look. As this Court has found, "[b]ecause third-party exchanges did not have Last Look to 'see all the bids' and vary their take rate accordingly, they lost scale and revenue from AdX's use of sell-side dynamic revenue share". Liability Op. at 36. This was anticompetitive: "By using

[11] In addition to manipulating its take rate for AdX, Google could manipulate the margin AdWords charged to advertisers. AdWords charges an advertiser based on the number of times that internet users click on that advertiser's ad (cost-per-click ("CPC") pricing). But AdWords bids into AdX based on the number of ad impressions displayed to a user, regardless of whether the user clicks on the ad (impression-based (*e.g.*, CPM) pricing). AdWords does not disclose to advertisers the bids that it submits on their behalf or the fees that it retains for any particular ad or click. Therefore, Google can selectively reduce both its AdWords margin *and* its AdX take rate to secure high-value ad spaces. Google wins more ad spaces by pulling not one, but two margin levers (AdX and AdWords) after DFP feeds all competitors' bids to AdX through Last Look. Google's control over multiple nodes in the ad tech stack made this conduct possible.

the Last Look informational advantage to vary AdX fees and win impressions that it would have lost in a fair auction, Google has further enhanced AdX's market power at the expense of rivals, thereby reducing competition and harming its publisher customers' ability to diversify their revenue sources away from Google." *Id.* at 100.

VI. Google Deploys Project Poirot To Crush Header Bidding.

A. *Google Recognizes Header Bidding as an "Existential Threat" to Its Monopolies.*

108. Despite maintaining an unfair advantage in the header bidding environment through Last Look and SSDRS, Google still was unhappy that header bidding challenged AdX's market share and margins by forcing it to compete against real-time bids from other ad exchanges. By 2016, Google estimated that "[i]f we do nothing, pub[lishers] will adopt header bidding en masse by EOY 2016". Indeed, given the widespread publisher adoption of header bidding, Google viewed header bidding as an "existential threat" to its complete domination of the ad exchange market—a threat that could have forced Google to do the one thing that it has steadfastly avoided for years: compete on the merits of its various products. As one Google employee put it:

> By invalidating the need for an ad server [to obtain real-time bids,] we are setting the stage for Google to actually have to compete alongside the SSPs [*i.e.*, other ad exchanges] (or whatever these platforms are called then) for any access to any publisher inventory in the future. And we'll be disadvantaged at that point because, unlike our competitors, pub[lisher]s have been viewing us as a necessary evil, instead of a responsive, innovative partner, so they are eager to figure out how to cut us out altogether.

109. Another Google employee wrote: "with header bidding we're finally entering a world of true, multi-sourced RTB with all 'buyer participation' . . . is this basically a decentralized exchange where there is no authoritarian intermediary in the form of the exchange operator that inhibited buyer participation?" This signaled how close Cadogan and Fairchild had

come, through the innovation of header bidding, to breaking through Google's manipulations to achieve the fair and efficient programmatic auction system they had envisioned when they first joined OpenX.

110. Recognizing the threat that header bidding posed to its ad exchange and ad server monopolies, Google sought to "dry out" header bidding, embarking on a multi-year strategy to weaken header bidding and its proponents. In one instance, Google advised a publisher to remove the OpenX Ad Exchange from header bidding to solve a purported "strain on your servers" and supposedly to improve the publisher's inventory yield. Internally, Google employees recognized that these statements were false and that Google's misrepresentations, if exposed, would make it difficult "to convince [companies] to trust us" and would give Google a "bad look". In another case, Google employees discussed playing a "jedi mind trick" on publishers to "get publishers to come up with the idea to remove exchanges" from header bidding "on their own", even though Google recognized that doing so was "NOT in the publisher's best interests".

B. ***Google Launches Project Poirot To Preserve AdX's Monopoly.***

111. In addition to sporadic misrepresentation, Google launched a systemic program to stunt header bidding's procompetitive effect: **Project Poirot**, a program intended to cripple header bidding's proponents and further entrench AdX. Google specifically targeted the companies that had pioneered header bidding, and primarily OpenX.

112. To execute on its plan, Google utilized another demand source in its arsenal—DV360. In 2010, Google acquired Invite Media, which it renamed "DoubleClick Bid Manager" ("DBM") and later again renamed Display & Video 360 ("DV360"). DV360 is a Demand-Side Platform ("DSP"). As this Court has found, DSPs "provide large advertisers with significant control over the sources of inventory from which they purchase impressions and how they bid on

those impressions". Liability Op. at 14. Specifically, DSPs offer "a single interface for advertisers to manage programmatic and direct ad buying, to synthesize data about publisher inventory and users, and to bid into ad exchanges". *Id.* Although AdWords advertisers typically lack the resources to meaningfully resist Google's restriction on their ability to place bids on rival ad exchanges, DV360 is used primarily by larger and more sophisticated advertisers or ad agencies with significantly more know-how and leverage to manage advertising purchases. At the behest of these large buyers, who recognized the value of a competitive ad exchange market, Google had no choice but to allow DV360—unlike AdWords—to place bids on multiple ad exchanges. In fact, during the relevant period, DV360 has been the largest source of advertiser demand for OpenX.

113. In 2016, unbeknownst to its customers, Google embarked on a plan to use its control over demand from DV360 to further entrench AdX's monopoly and squash the procompetitive effects of header bidding.

114. At the start of this effort, Google considered stopping DV360 from bidding on header bidding queries altogether, to "put pressure on companies providing header bidding". Google thus ran several experiments that simply turned off DV360 spend on competing ad exchanges. But Google recognized that it could not "say with a straight face" to sophisticated buyers that stopping DV360 spend on header bidding exchanges—*i.e.*, tying DV360 demand to AdX, as Google has done with AdWords—"is the best for a buyer" unless it lowered margins on AdX, which it was not willing to do. Therefore, Google needed to find "a defensible way to change [DV360's] buying strategy to move spend from [rival ad exchanges] to AdX". In other words, Google needed to find a pretextual justification to shift spend from header bidding exchanges back to AdX.

115. Google launched Project Poirot as one supposedly "defensible way" to respond to header bidding and to tighten its grip on the exchange market by strengthening AdX's monopoly. Google decided on a simple but devastating solution to combat header bidding: rather than "stop bidding on HB [header bidding] queries, we could bid lower on HB queries". Thus, in 2017, Google surreptitiously began to reduce the bids that DV360 submitted to ad exchanges that participated in header bidding. In this way, Project Poirot significantly reduced the number of transactions conducted through exchanges that participated in header bidding. Internal documents show that Google's goal for Project Poirot was to "dry out" header bidding.

116. To achieve this goal, Google used the structure of header bidding auctions—which ironically arose in part as a response to Google's anticompetitive conduct—against header bidding's proponents. There are two general structures for programmatic auctions: first price and second price. First-price auctions and second-price auctions differ in a single important aspect—the price paid by the winning bidder. In a first-price auction, the winning bidder must pay the price it bid. In a second-price auction, by contrast, the winner must pay a price equal to, or just above, the second-highest bid (or the price floor, if that floor is higher than the second-highest bid). For example, if two bidders—Bidder 1 and Bidder 2—bid $1.00 and $0.50 respectively in an auction, Bidder 1 ($1.00) would win the auction, regardless of the auction format (*i.e.*, first-price versus second-price). In a first-price auction, Bidder 1 would then be required to pay $1.00—the price it bid. In a second-price auction, Bidder 1 would be required to pay $0.51—just above the second-highest bid in that auction (provided that the price floor is lower than both bids).

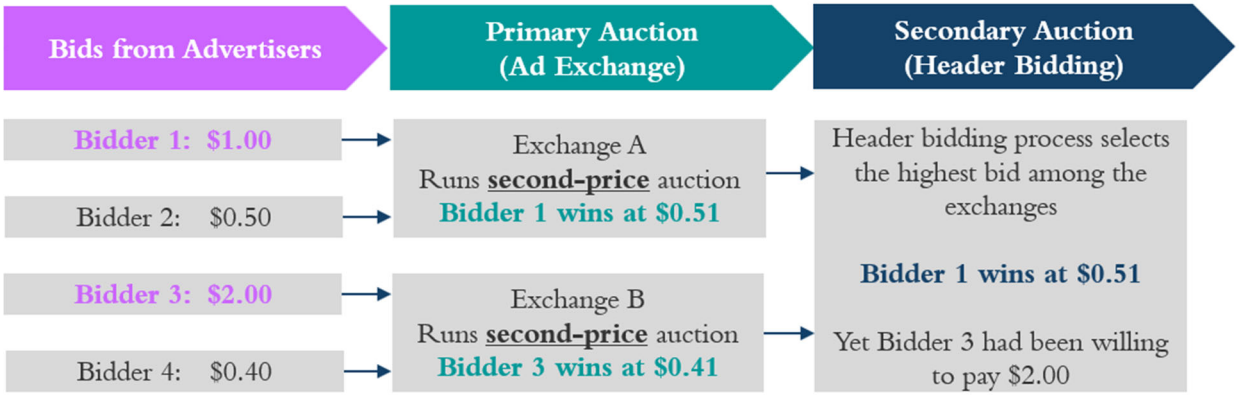
117. For years, ad exchanges ran second-price auctions, which were popular because they were simple. Each bidder could bid at the price that the bidder truly valued the ad space,

without needing to guess whether a lower bid might suffice to win the auction. The waterfall system supported that logic. In the waterfall, each ad exchange ran a separate auction designed to answer a single question—whether any of its advertisers were willing to pay above that exchange's price floor. That would determine the ad exchange's "yes"/"no" response to the ad request; the clearing price would be at the price floor. In other words, the winning bid was judged only against the price floor in a single exchange's auction—not against bids from other exchanges.

118. In header bidding auctions, by contrast, the second-price format makes little sense. Each ad exchange submits its winning bid from its own primary auction into what is essentially a secondary auction, in which the winning bids from the primary auctions compete to determine the price floor to inject into DFP (where that winning bid then competes against the winning bid of the AdX primary auction). Therefore, each exchange's winning bid is judged against bids from other exchanges before it is ever injected as a price floor into DFP.

119. Figure 6, below, demonstrates the ensuing problem. Exchange A could run a primary auction between Bidder 1 ($1.00) and Bidder 2 ($0.50), while Exchange B could run a primary auction between Bidder 3 ($2.00) and Bidder 4 ($0.40). If both primary auctions are run using second-price mechanics, then Bidder 1 will win Exchange A's auction at $0.51 and Bidder 3 will win Exchange B's auction at $0.41. When those results are pitted against each other in the secondary header bidding auction, Exchange A will beat Exchange B—even though Bidder 3's bid of $2.00 into Exchange B was by far the highest bid overall.

Figure 6: The Problem with Using a Second Price in Multiple Auctions



120. Because of these seriatim auctions, the advertisers in second-price auctions who were willing to pay the most could lose ad spaces to other advertisers who had bid less than them. Thus, to compete effectively in header bidding, almost every major ad exchange eventually moved to a first-price auction. OpenX made this shift in late 2017, after many competing exchanges had already done so, to ensure it could continue to compete effectively in header bidding auctions. OpenX made this change publicly, after months of working in partnership with its DSP partners—including DV360—to ensure a smooth transition.

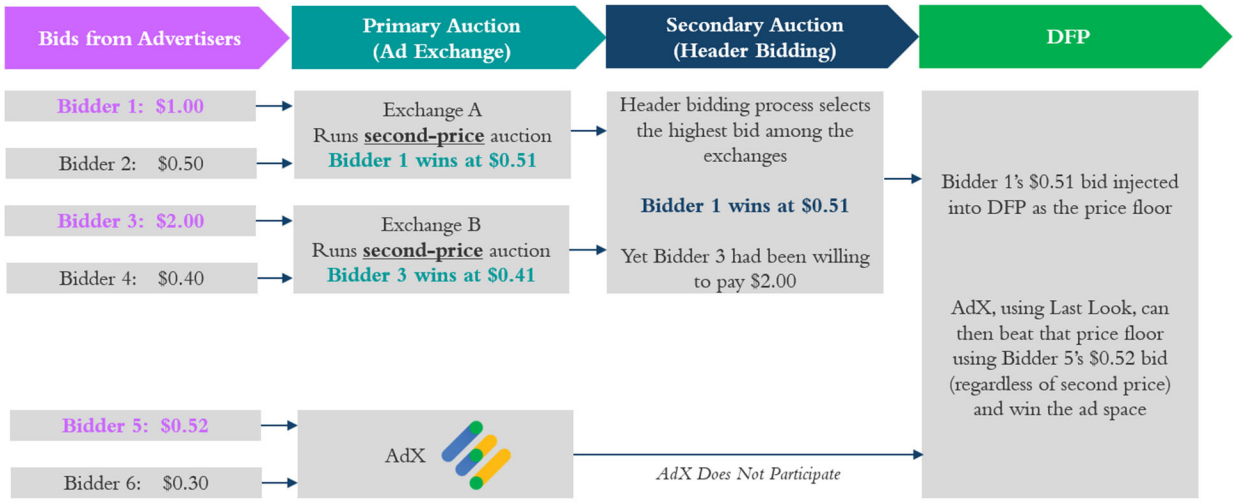
121. As of early 2018, only one major exchange had not yet shifted to a first-price auction: AdX. Unlike its competitors, AdX did not need to shift to a first-price auction for a simple reason: the informational and structural advantages that DFP afforded to AdX meant that it did not have to deal with the same competitive landscape as rival exchanges. The biggest of these advantages was Last Look.

122. Absent insight into the winning price coming from header bidding afforded by Last Look, AdX would have been forced to move to first-price bidding at the same time as its competitors to avoid the same risk reflected above. Namely, AdX would have lost ad spaces when its second-highest bid was lower than the winning bid from header bidding, even if its

highest bid exceeded that winning bid from header bidding. But because of Last Look, AdX could bid *after it was informed of* the winning bid from header bidding, which DFP presented to AdX as the price floor that it had to beat. Therefore, AdX could maintain its second-price format and still win the ad space as long as its highest bid (as manipulated through SSDRS) exceeded the price floor, *i.e.*, the highest bid from the header bidding auction. In other words, because of Last Look, AdX had all the advantages of a first-price auction when competing against header bidding, even while notionally running a second-price auction.

123. Figure 7 continues the example above to demonstrate AdX's Last Look advantage. Bidder 1 from Exchange A wins the header bidding auction at $0.51. The publisher injects that bid into DFP, and DFP informs AdX of that price as the price floor it needs to beat. AdX therefore wins so long as its highest bid exceeds the $0.51 price floor—even if its second-highest bid does not. If not for Last Look, then AdX's own second price of $0.31 would lose. Figure 7 also shows, however, that if the header bidding exchanges switched to a first-price auction, AdX could not win the ad space unless its highest bid was actually higher than the highest bid coming from header bidding—in this case, Bidder 3's bid of $2.00; at that point, AdX could only win the ad space at $2.01.

Figure 7: The Problem with Multiple Auctions and Google's Last Look



124. Google recognized that, within header bidding's more competitive landscape, (1) third party ad exchanges had to transition to first-price auctions to make header bidding work effectively at scale; and (2) DFP's auction manipulations through Last Look meant that AdX—and AdX alone—could still maintain a second-price auction and consistently win ad spaces.

125. Google documents show that Google recognized that virtually "all [header bidding] is transacted through first-price auctions", making first-price auctions the perfect pretext through which to harm ad exchanges using header bidding, such as OpenX. In the words of one Google employee: "The problem isn't so much that DBM [DV360] is buying HB [header bidding] inventory -- the problem is that HB exists :)". Google developed Project Poirot to lower (or "shade") its DV360 bids into rival exchanges by up to 90%. And because DV360 bid into both AdX and rival ad exchanges but Project Poirot lowered DV360's bids only into rival exchanges, Project Poirot both (a) decreased the likelihood that rival exchanges would win by lowering their bids and (b) increased the likelihood that AdX would win by lowering the floor price from header bidding that AdX had to beat given Last Look.

126. Project Poirot worked by systematically reducing bids into third-party exchanges that Google determined, through experiments, deviated from second-price auction behavior. Those experiments naturally identified exchanges participating in header bidding because they had moved to first-price auctions. They also captured header-bidding exchanges that optimized price floors in second-price auctions to better reflect an ad space's true value, so as to maximize the opportunity for the ad exchange to win the ad space.[12] Google used a fixed threshold of deviation from second-price auction behavior to determine whether to apply Project Poirot to a specific ad exchange. Once applied, DV360 systematically reduced its bids into that exchange.

127. Project Poirot was incredibly effective at achieving its stated purpose to "dry out" header bidding. Indeed, Project Poirot was so effective at shifting DV360 spend from header bidding exchanges to AdX that Google became concerned that "AdX is now dominant to the point where we need to communicate to advertisers (and sometimes even to exchanges) why over 70% of DBM [DV360] spend happens on AdX". Google employees "worr[ied] about AdX share shift", so they "proactively engaged PR to see if they wanted to get ahead of the story but they didn't want to call attention to this". All of this revealed what Google already knew: Project Poirot did not promote competition between rival exchanges and AdX, which increased

[12] When header bidding exchanges, including OpenX, ran second-price auctions, they sometimes used dynamic floors because publisher-set price floors often undervalued ad spaces. When publishers set undervalued price floors in a second-price auction with few participants, the exchange's winning bid would clear at an artificially low price (typically the publisher's unduly low price floor plus one cent). At that price, the exchange had little chance to win the ad space when faced with competition from other header bidding exchanges and AdX. AdX, by contrast, did not need to use dynamic floors to win ad spaces (although it did employ similar techniques, as discussed *infra* Section VI.C) because DFP always told AdX the actual price floor it needed to beat to win the ad space—whether that price floor originated from the publisher or (more likely) from actual real-time bids from header bidding exchanges.

advertiser choice, but instead protected AdX's market share at a time when its monopoly was most threatened.

128. OpenX—the holder of several patents covering header bidding and a leading proponent of the technology—was hit especially hard. Project Poirot accomplished its goal of dramatically reducing DV360 spend on the OpenX Ad Exchange. When it introduced Project Poirot in 2017, Google found that Project Poirot reduced DV360 spend on non-AdX exchanges by about 10% but decreased spend on the OpenX Ad Exchange by a brutal 30%. In turn, "Project Poirot resulted in advertisers that used DV360 spending an average of 9% more on AdX." Liability Op. at 37.

129. Google never disclosed Project Poirot to other ad exchanges such as OpenX. In fact, Google took affirmative steps to conceal Project Poirot. For example, Google introduced the first iteration of Poirot "gradually" over several phases and initially limited the amount that DV360 could shade bids into rival ad exchanges to 40%, making Project Poirot harder to detect on the exchange side. OpenX therefore had no way to determine the cause of any decline in DV360 spend on the OpenX Ad Exchange, or to try to address such decline. OpenX had no knowledge of this first iteration of Project Poirot.

130. In late 2018, Google launched Poirot 2.0, which lowered DV360 advertiser bids to header bidding exchanges such as OpenX by as much as 90%. Google predicted in August 2018 that Poirot 2.0 would reduce DV360 spend on the OpenX Ad Exchange by 42%—more than any other ad exchange. Consistent with that Google internal forecast, by December 2018, the OpenX Ad Exchange had experienced a 40% decrease in year-over-year spend from DV360. Overall, OpenX, the pioneer and foremost proponent of header bidding, was harmed more than any other exchange by Project Poirot and Poirot 2.0.

C. *Project Poirot Did Not Target AdX, Despite Reserve Price Optimization.*

131. Although Google ostensibly designed Project Poirot to target all exchanges that deviated from second-price auctions, Project Poirot went on for years without targeting AdX, even as AdX itself deviated significantly from a pure second-price auction. Specifically, beginning in 2015, to maximize its revenue, AdX employed a floor boosting program that it called Reserve Price Optimization ("RPO"). RPO used AdX's robust and unique historical bid data to override the price floors that publishers set on AdX and generate advertiser-specific price floors based on those advertisers' historical bids. If the RPO floor exceeded the second-price bid, it acted as the clearing price, forcing advertisers to pay more than they otherwise would—and as a result, allowing AdX to collect higher fees. An internal Google document stated that the goal of RPO was to "select a reserve [or floor] price as close to the anticipated first price as possible in order to trade buyer for seller surplus".

132. Google employees acknowledged that RPO floors were "basically pushing our second price auction—that is supposed to be fair—toward a first priced auction". For example, one employee wrote in an email that RPO "undermine[s] the whole idea of second price auctions" because "if the publisher manufactures a floor price based on your bid to get you to pay more than the second price" then "[i]t'll transform the system into a 1st price auction where the bidder has a strong incentive to bid LESS than he's willing to pay. (Only just enough to win.)".

133. Project Poirot, if neutrally run, should have lowered DV360 bids into AdX because RPO caused AdX to deviate from a second-price auction. But armed with exclusive knowledge about the existence and inner workings of Project Poirot, and immunized by Last Look from the need to deviate from publisher-set price floors simply to win ad spaces, Google fine-tuned AdX's own auction mechanics to avoid triggering Project Poirot's algorithm. Internal

documents reveal that AdX and DV360 teams at Google collaborated to design "less aggressive" auction strategies for AdX "to avoid things like Poirot". For example, Google considered launching a new version of RPO on AdX that "show[ed] significant scope for surplus [difference between value and cost] improvement" for advertisers. However, the launch team noticed a concerning result: "The production Poirot model doesn't react to this but the launch candidate does". In other words, if Google had made the change, Project Poirot would have begun systematically reducing DV360's bids into AdX, as it did for header bidding exchanges. Armed with this unique insight, the AdX team then adjusted its plans for the RPO algorithm to avoid triggering Project Poirot; other ad exchanges, of course, lacked the knowledge to do so. Nor could they have remained competitive against AdX had they done so given the sequential auctions they faced in header bidding and against AdX's Last Look.

134. Google also resolved that it would modify Project Poirot's algorithm if needed to ensure that DV360 would not lower bids into AdX: "If AdX is going further down RPO, DBM [DV360] will refine Poirot." Ultimately, by secretly modifying AdX's auction dynamics to exempt AdX from Project Poirot's effects, Google further exacerbated Project Poirot's anticompetitive effects.[13]

[13] Beyond RPO, SSDRS was another AdX manipulation that could have triggered Project Poirot. Yet AdX did not apply SSDRS to bids that AdX received from DV360—the bids within Project Poirot's scope. Theoretically, SSDRS could have triggered Project Poirot because it caused AdX to deviate from a second-price auction. As discussed above, SSDRS lowered AdX's take rate to increase some bidders' net bids above another exchange's winning bid, meaning that those bidders would ultimately pay a higher price than the price of the unaltered second-place bid. *See supra* Section V. Thus, bidders would have incentive to shade their bids into AdX when it employed SSDRS. Yet despite using SSDRS on bids from almost all other ad buying tools, AdX turned off SSDRS for bids from DV360—the one ad buying tool that ran Project Poirot. So SSDRS did not trigger Project Poirot.

D. *Despite Repeated Inquiries, Google Concealed Project Poirot from OpenX.*

135. After Project Poirot resulted in a 40% decrease in year-over-year spend from DV360 to the OpenX Ad Exchange, OpenX repeatedly pleaded with Google—its largest source of advertiser demand—for an explanation of the decline. At one point, Cadogan, OpenX's then-CEO, sent an email to Google showing the massive decline in DV360 spend on the OpenX Ad Exchange as of November 2018, adding "I don't need to belabor the significance of this for us. How can you help here?" Google never responded to Cadogan's email. When OpenX tried to discuss the decline in DV360 spend with Google, Google offered only terse, inconsistent explanations that concealed more than they revealed. For example, Google blamed the European Union's General Data Protection Regulation and ads.txt—an unrelated technical standard—as reasons for the decline. For months, OpenX ran experiments to try to determine why DV360 had decreased its spend on the OpenX Ad Exchange. But because Google took so many steps to conceal Poirot, OpenX was unable to determine the reason for the decline with any degree of certainty.

136. OpenX was disappointed by Google's responses to its inquiries given the parties' longstanding relationship. OpenX had worked with Google for years across multiple business segments on both the buy side and sell side. OpenX also was negotiating a major contract for Google Cloud services at the same time that Google was actively harming OpenX through Project Poirot, and OpenX even reached out to Google Cloud employees for guidance given the opaque responses that OpenX had received from Google's ad tech counterparts.

137. If DV360 had disclosed Project Poirot to the independent ad exchanges in addition to AdX, those exchanges could have explored options to adjust their auction logic to address Google's purported concerns about non-second-price auctions. Yet Google did not disclose Project Poirot because it did not *want* to give competing exchanges that opportunity.

Internal documents reveal that Project Poirot was part of a broader plan to address the fact that header bidding "exists". The goal was not to shift the industry back to second-price auctions—which would not have made sense in the pro-competitive header bidding landscape. Rather, Google intended to shift demand back to AdX and away from the competitors that had threatened AdX's monopoly with header bidding. Nor did Google disclose details about Project Poirot to its publisher or advertiser clients. Google concealed Project Poirot from advertisers who would have protested had they known that Google was purposefully weakening competition in the ad exchange market.

138. Project Poirot was an AdX-driven project aimed at protecting AdX's monopoly power. By lowering DV360 bids into header bidding exchanges, but not into AdX, Project Poirot diverted transactions to AdX, further leveraging the unique advantages AdX enjoyed through Last Look and the superior information provided to it by DFP. Not unlike its decision to funnel AdWords demand almost exclusively through AdX, Project Poirot effectively ensured that the vast majority of Google's other major source of demand, DV360, would likewise be funneled through AdX—and not through competing ad exchanges that could place real-time bids in competition with AdX. As noted above, Project Poirot was designed to "combat the effects of header bidding", and combat them it did—by crushing competition in general and harming OpenX specifically.

* * *

139. At the time Google launched Project Poirot, OpenX had been weakened over many years by Google's other anticompetitive conduct—product ties, Dynamic Allocation and SSDRS. The combined effect of that conduct and Project Poirot was devastating. As a result, OpenX was forced to undergo two rounds of layoffs. Between October 2018 and March 2019,

OpenX had to terminate 210 employees—nearly 50% of its workforce at the time. In the years that followed, OpenX's growth was stunted, as it lacked the resources to innovate and develop new product features. OpenX also faced severe harm to its goodwill and reputation from its public cuts, which suggested to customers that OpenX lacked the resources to support its goals. To this day, OpenX continues to suffer the consequences of Google's conduct, including Project Poirot.

VII. Google Curtails Publisher Flexibility with Unified Pricing Rules.

140. In 2019, Google imposed yet another restriction on the way advertisers and publishers interact with each other. Its objective, again, was to add barriers that would prevent publishers from transacting effectively through competing ad exchanges. Google did so by implementing **Unified Pricing Rules ("UPR")**. UPR is a mandatory program designed to force publishers to prefer (or at least not disfavor) AdX.

141. Prior to the adoption of UPR, publishers using DFP had the flexibility to set whatever price floors they wanted, including by adjusting price floors over time, among different ad spaces—or, to Google's chagrin, among different ad exchanges. Most specifically, publishers could set a higher price floor for AdX than for third-party exchanges, making it harder for AdX to win an ad space. Publishers took advantage of that flexibility to try to mitigate the effects of Google's anticompetitive schemes and shift at least some transactions from AdX back to other competitors, including the OpenX Ad Exchange.

142. Publishers had set higher price floors for AdX than for third-party exchanges for multiple reasons. As this Court has found, "many publishers using DFP had been setting higher pricing floors for AdX than for other exchanges so that they could reduce their high dependence on Google's ad tech stack." Liability Op. at 38. Google itself recognized that "pub[lisher]s are also rational[] when they decide to diversify their sources of revenue" to "keep Google at bay

and put pressure on us", given that "we can decide to change the conditions of our offer suddenly and unilaterally". Publishers also sometimes set higher floors for AdX to steer transactions to other ad exchanges that charged a lower take rate. As this Court has found, "[p]ublishers also set higher floor prices on AdX to screen out low-quality ads, which were more likely to originate from smaller advertisers using AdWords". Liability Op. at 38. Still others raised AdX price floors to increase competitive pressure on AdX, forcing AdX to work harder and bid higher to win ad spaces given its built-in advantages. In short, as this Court has found, publishers' control over their price floors "was a primary tool that publishers had used to maintain revenue diversity and mitigate Google's dominance of the ad exchange market". *Id.* at 100.

143. With UPR, publishers using Google's ad server are no longer able to set lower price floors for bids from non-Google ad exchanges relative to AdX. As a result, publishers, despite their desire to do so, may not set different price floors to drive ad spaces away from AdX and toward the OpenX Ad Exchange. Importantly, this limitation was a one-way ratchet; as this Court has found, "[d]espite its name, Unified Pricing Rules did not require a level playing field between exchanges" because it did allow publishers to set a price floor for AdX that is *lower* than the price floor set for other exchanges. Liability Op. at 38. Thus, UPR essentially permits publishers to prefer AdX, while *preventing* them from preferring OpenX (or another non-Google exchange).

144. Publishers were outraged by the introduction of UPR, which further degraded the quality of DFP by eliminating a feature that they valued and relied on. For example, Stephanie Layser of News Corp. testified before this Court: "I told [Google] that I believe that they were doing UPR in the best interests of Google and not in the best interests of their publishers." Felix Zeng of Weather.com noted that UPR took away publishers' ability to cut deals with non-AdX

exchanges in which they promised a certain volume of transactions in exchange for a lower take rate. Jana Meron of Business Insider told Google that "[t]his was built for Header Bidding NOT to exist", a position applauded by other publishers. During a meeting at which Google employee Rahul Srinivasan announced the introduction of UPR to publishers, the feedback was so overwhelmingly negative that Jay Glogovsky of *The New York Times* told him: "I hope the Googlers in the back buy you a really stiff drink later." Srinivasan responded: "I think I need it right now."

145. Of course, publishers could not switch to a different ad server in response to UPR because they could not afford to lose real-time bids from AdX, including bids representing the extremely valuable AdWords demand that Google made available almost exclusively to publishers using DFP through its dual ties. As Layser of News Corp. wrote to Google in 2019: "AdX is currently tied to DFP functionality leaving me to be forced into using the adserver should I want full access to AdWords . . . . That behavior [] seems like a way that Google is forcing publishers onto their adserver and hindering fair competition in the adserver market and freedom to switch should the publisher community be unhappy with changes."

146. UPR does not benefit publishers. For example, the *Daily Mail* found that "AdX is monetising roughly 3x the amount of our inventory post UPR, but we don't see much change in revenue".

147. The impact of UPR on OpenX and rival exchanges has been devastating. As this Court has found: "Unified Pricing Rules increased the number of impressions AdX won and the revenue it received, while decreasing impressions won and revenue received by third-party exchanges. . . . The overall result of Unified Pricing Rules was that Google's ad tech products

continued to gain scale in the display advertising space while rival ad tech products lost scale." Liability Op. at 39.

148. This Court has found that "Unified Pricing Rules is another example of Google exploiting its monopoly power and tying arrangement to restrict its customers' ability to deal with its rivals, thereby reducing its rivals' scale, limiting their ability to compete, and further compounding the harm to customers". Liability Op. at 100–01. "Unified Pricing Rules constituted anticompetitive conduct because it involved Google using its coercive monopoly power to deprive its publisher customers of a choice that they had previously exercised to promote competition." *Id.* at 101.

VIII. Google Exploits Scale, Network Effects and Informational Disparities.

149. Ad exchanges benefit from network effects because an exchange's success is based on its ability to connect publishers to advertisers and vice versa. Without simultaneous access to both publisher supply and advertiser demand at scale, an ad exchange will not be able to grow, because advertisers are only willing to work with exchanges that offer significant publisher supply and publishers are only willing to work with exchanges that offer significant advertiser demand.

150. Publisher ad servers also benefit from network effects because ad servers must connect their publisher clients to significant advertiser demand, and working with more publishers helps to attract that demand.

151. Access to data is essential to the successful operation of various products in the ad tech stack, including ad exchanges. Multiple types of data allow publishers, advertisers, and ad tech tools to optimize their performance. User data, including data concerning a user's demographics and interests, help publishers and ad exchanges properly value inventory and help

advertisers and DSPs obtain optimal matches. Auction data, including data concerning bidding, available impressions and won impressions, enable ad tech products to improve their algorithms. All of these data allow advertisers, publishers and ad exchanges to properly value ad spaces and ensure the best match between an ad space and an advertiser. Advertisers with greater information about each ad space are able to submit higher bids for the ad spaces that they value most. Ad tech tools with greater access to such data thus have an information advantage that attracts both publishers and advertisers. Conversely, a lack of access to such data is a barrier to competing effectively, particularly for an ad exchange.

152. Google has maintained a significant information advantage throughout the ad tech stack because it shares data between its dominant ad buying tools (AdWords and DV360), its monopoly ad exchange (AdX) and its monopoly publisher ad server (DFP). No other industry player had the same level of access to user and auction data.

153. This data advantage has created a vicious cycle that benefits Google's ad exchange. An ad tech provider that sees a larger swath of inventory can adjust its bidding behavior accordingly. Additionally, an ad tech provider that can see at scale who bids on inventory and at what prices can create bidding strategies to more reliably win future auctions for similar inventory. This Court has recognized this feedback loop:

> Google's unparalleled scale in programmatic advertising has given it significant advantages over rival firms. Scale is a crucial factor for ad tech companies' ability to compete because of the importance of big data analytics for optimizing ad tech services and the significant network effects that exist in programmatic advertising. The unmatched scale that Google has achieved across the open-web ad tech stack helps the company test products more quickly and make higher-quality matches between advertisers and publishers. As ad tech products continue to integrate artificial intelligence and machine learning capabilities, Google's vast repositories of data about advertisers, publishers, and Internet users, combined with the

> company's scale and technical sophistication, will further benefit its open-web display advertising business.

Liability Op. at 40 (citations omitted).

154. Through its ties, Google has conditioned publishers' access to AdWords demand on using AdX and has conditioned publishers' access to real-time bids from AdX on using Google's own ad server, DFP. Google's conduct funneled an overwhelming volume of transactions through AdX, giving Google access to far more data than OpenX. That conduct allowed AdX to optimize its bidding behavior at scale more effectively than its competitors. Google's conduct deprived rival ad exchanges like OpenX of scale, both in terms of publishers and advertisers participating in the exchange and in terms of transaction volume.

155. Google compounded this information asymmetry by exploiting its connections across the ad tech stack to benefit its own ad tech tools. For example, under First Look, DFP shared rival ad exchanges' historical bids with AdX. Last Look similarly provided the winning bids from header bidding auctions to AdX. In short, whereas competing exchanges typically have insight into only the (relatively few) transactions they win, AdX has insight into the vast number of transactions it wins, *and* at least partial insight into the transactions it loses. Google's informational advantage created a vicious cycle for OpenX and other competitors: as Google deployed anticompetitive programs to accumulate more data, it won more auctions, which in turn allowed it to accumulate even more data.

156. Moreover, Google exploits its control over the market's dominant ad server, DFP, to benefit its other ad tech products by sharing data with them but not with publishers. DFP sequesters some of the most valuable data—such as DFP user IDs—in the black box of Google's internal ad tech stack. Google is only able to do so because of its monopoly power. An ad server is a product that should serve and be responsive to the needs of publishers. No ad server

in a competitive market would limit the valuable information it makes available to its publisher clients. Yet DFP tells publishers nothing about Google's take rate manipulations. Google thereby keeps publishers in the dark about the manipulations of its transaction fees and bids that it uses to win ad spaces. And as a result of this opacity, Google's ad tech competitors, like OpenX, cannot access critical data—which publishers have an interest in sharing with them—so as to adjust their bidding strategies to compete more effectively with Google for publishers' inventory.

IX. Google Has Monopoly Power in the Markets for Publisher Ad Servers and Ad Exchanges.

157. This case concerns Google's anticompetitive conduct weaponizing the ad tech tools used to deliver open web display ads. "Open-web display ads are display ads that run on websites that use third-party ad tech infrastructure to match advertisers' ads to publishers' inventory." Liability Op. at 21. Open-web sites are distinct from walled garden websites. "Walled gardens, conversely, are publishers that control the infrastructure through which advertisers buy and place advertisements on their websites." *Id.* Because "[w]alled-garden publishers maintain their own in-house ad tech and require advertisers to use those tools to buy and place advertisements on the publishers' owned-and-operated web properties", *id.*, walled gardens are not served by OpenX, and are therefore not relevant to this case.

158. Other advertising distinct from open-web display advertising (and thus not part of this case) includes in-app ads, social media ads, search ads and outstream video ads.

A. *Publisher Ad Servers for Open-Web Display Advertising.*

i. *Product Market.*

159. As this Court has found, "publisher ad servers for open-web display advertising constitute a distinct relevant product market". Liability Op. at 43.

160. Publisher ad servers help publishers manage their inventory and sell display ads on their webpages. As this Court has found, publisher ad servers "are uniquely suited for managing ad inventory for large web publishers, are priced differently than other ad tech tools, and are recognized as a distinct product by ad tech industry participants". Liability Op. at 43. They perform unique functions, including "allocating ad inventory between direct sales and programmatic sales; placing ad exchange bids in competition with bids from header bidding, programmatic direct sales, and other ad exchanges; rendering an advertisement on the publisher's webpage for each impression; billing for ads rendered; and providing inventory and revenue analytics". *Id.* at 44 (footnote omitted). As a result, "other ad tech tools are not reasonably interchangeable with publisher ad servers". *Id.* at 43.

ii. ***Geographic Market.***

161. As this Court has found, "the relevant geographic market for both publisher ad servers for open-web display advertising and ad exchanges for open-web display advertising is worldwide", excluding countries where the operation of ad tech companies is substantially restricted. Liability Op. at 71.

162. "Many U.S.-based advertisers target international Internet users, and many international advertisers target U.S.-based users, including by advertising on U.S.-based publishers' webpages. Similarly, advertisers bid to target international users who visit U.S.-based publishers' pages, and Americans consume digital content from international publishers. Ad tech providers, in turn, have built global infrastructure and often manage, price, sell, and track performance of their products globally." Liability Op. at 69 (citations omitted).

iii. ***Google Has Monopoly Power in the Market for Publisher Ad Servers.***

163. Google offers DFP, now part of the Google Ad Manager suite, as a publisher ad server in the relevant market.

164. As this Court has found, "Google possesses monopoly power in the publisher ad server for open-web display advertising market". Liability Op. at 73. "From 2018 through 2022, Google's share of this worldwide market held steady between 91.0% and 93.5%, and its U.S. market share stayed between 86.5% and 92.3%." *Id.* (citations omitted). Moreover, Google's monopoly power in the publisher ad server market has been durable because of "significant barriers to entry and expansion", the difficulties in convincing publishers to switch from using one ad server to another, and "the lack of meaningful alternatives to DFP" due to Google driving competitors such as OpenX out of the market. *Id.* at 74–75. Over time, Google has been able to degrade DFP's product quality despite publishers' negative feedback, further evidencing its monopoly power. *Id.* at 75–76.

B. ***Ad Exchanges for Open-Web Display Advertising.***

i. ***Product Market.***

165. As this Court has found, "ad exchanges for open-web display advertising constitute a distinct relevant product market". Liability Op. at 50.

166. "Ad exchanges play a distinct role in the open-web display ad tech stack by connecting publishers using publisher ad servers with advertisers using programmatic buying tools such as demand-side platforms and ad networks." Liability Op. at 50. "The ad exchange is the only ad tech tool through which publishers can auction their ad inventory at scale and in real-time to the largest sources of programmatic advertising demand." *Id.* at 51. Consequently, "there is no other ad tech tool that is reasonably interchangeable with ad exchanges." *Id.* at 50.

Publishers and advertisers cannot meaningfully substitute from open-auction transactions on ad exchanges to direct transactions.

ii. ***Geographic Market.***

167. For the reasons set forth above in Paragraphs 161–162, the relevant geographic market for ad exchanges is worldwide, excluding countries where the operation of ad tech companies is substantially restricted.

iii. ***Google Has Monopoly Power in the Market for Ad Exchanges.***

168. Google offers AdX, now part of the Google Ad Manager suite, as an ad exchange in the relevant market. As this Court has found, "Google possesses monopoly power in the ad exchange for open-web display advertising market". Liability Op. at 76.

169. Google has substantial market share in the market for ad exchanges. Worldwide, between 2018 and 2022, AdX had a market share of roughly 63% to 71% of open-web display transactions in the ad exchange market—nearly an order of magnitude larger than the market share of AdX's nearest rival, which as of 2022 had less than a 6% share. Liability Op. at 82.

170. As this Court has found, "Google has charged durable supracompetitive prices for AdX—taking 20% of each open-web display transaction—and has exhibited an unwillingness to lower AdX's take rate even as the market matured and other ad exchanges reduced their prices. Despite the availability of lower priced exchanges, customers generally have not left AdX due to Google's substantial market power in the ad exchange market." Liability Op. at 76–77. Google employees questioned the continued viability of AdX's 20% fee, believing it to "extract irrationally high rent" for the services that AdX actually offered. But internal Google studies revealed that changing its fees would have little effect on customer retention or win rate. Google has generally refused to negotiate AdX's take rate with nearly all of its customers, with the

exception of a handful of very large publishers. *Id.* Yet despite this price rigidity, AdX has not lost market share. "AdX's durable 20% take rate constitutes direct evidence of monopoly power." *Id.* at 80.

171. Further evidence of Google's monopoly power in the market for ad exchanges is its use of "adjacent segments of the ad tech ecosystem to make it more difficult for customers on both sides of the ad exchange market to switch to rival exchanges". Liability Op. at 80. On the buy side, Google made AdWords demand—an essential demand source for publishers—virtually exclusive to AdX, even though allowing AdWords to bid into other ad exchanges would benefit Google's advertiser customers. On the sell side, Google limited AdX to send real-time bids only to DFP, even though publisher customers of other ad servers requested access to real-time bids. Publishers therefore had little choice but to continue using AdX, and continue paying Google's fees.

172. As this Court has found, AdX also benefits from "high barriers to entry and expansion. Scale and network effects are crucial for ad exchanges because these exchanges exist to create matches between publisher inventory and advertiser demand". Liability Op. at 83. The more customers and transactions that participate in both sides of an ad exchange, the more benefits accrue to that ad exchange—including economies of scale and "auction and targeting data that can be used to run rapid experiments on the effects of price and quality changes, to train machine learning algorithms, and to improve publisher-advertiser matching". *Id.* at 83–84.

X. After a Full Trial, the Court Has Found that Google Is a Monopolist in Ad Tech Markets and that Its Conduct Was Anticompetitive.

173. On January 24, 2023, following an investigation lasting several years, the United States Department of Justice, along with the attorneys general of California, Colorado, Connecticut, New Jersey, New York, Rhode Island, Tennessee and Virginia (together, the

"Government"), filed a civil antitrust lawsuit against Google in the Eastern District of Virginia, alleging that Google violated federal antitrust laws by monopolizing the ad tech markets described above and by tying access to real-time bids from AdX to the use of DFP.

174. The Government's case focused on the anticompetitive conduct described above, including Google's tying of AdWords demand to AdX and tying of real-time bids from AdX to DFP, Dynamic Allocation (First Look and Last Look), SSDRS and UPR.

175. The Government's case proceeded to a three-week bench trial that commenced on September 9, 2024. The Court (Brinkema, J.) heard testimony from over two dozen witnesses, including expert witnesses, and received hundreds of trial exhibits.

176. On April 17, 2025, the Court issued a Memorandum Opinion holding that:

i. Publisher ad servers and ad exchanges for open-web display advertising worldwide constitute valid product and geographic markets, respectively;

ii. Google's tying of real-time bids from AdX to the use of DFP was an unlawful tie;

iii. Google's tying of real-time bids from AdX to the use of DFP was an anticompetitive means to maintain monopoly power;

iv. First Look was anticompetitive;

v. Last Look was anticompetitive;

vi. Sell-Side Dynamic Revenue Share was anticompetitive;

vii. Unified Pricing Rules were anticompetitive;

viii. Google illegally acquired and maintained monopoly power in the publisher ad server market for open-web display advertising; and

ix. Google illegally acquired and maintained monopoly power in the ad exchange market for open-web display advertising.

Liability Op. at 43–54 (product market definitions), 67–71 (geographic market definitions), 73–84 (monopoly power); 90–98 (illegal tie of DFP to AdX), 98–101 (First Look, Last Look, Sell-Side Dynamic Revenue Share, Unified Pricing Rules), 114–15 (illegal acquisition and maintenance of monopoly power in the publisher ad server and ad exchange markets for open-web display advertising).

177. OpenX now brings this Action as a follow-on action under 15 U.S.C. §§ 15, 15b and 16(i), challenging the same conduct found by the Court to violate the Sherman Act, as well as Google's anticompetitive conduct in weaponizing Project Poirot against rival ad exchanges that posed a competitive threat to AdX.

XI. OpenX and Consumers Were Harmed by Google's Anticompetitive Conduct.

178. OpenX was one of the pioneers and first innovators in the digital advertising space, providing publishers with real-time bids from an exchange for the first time. OpenX's innovations were evident in the market shares it captured in its early days. However, due to Google's escalating anticompetitive conduct over time, OpenX was crippled and lost significant market share. OpenX did not just suffer lost sales and customers to Google; it also suffered significant capital losses. Google's anticompetitive conduct destroyed OpenX's ad server business (causing it to shut down entirely as a going concern) and caused reputational harm and loss of goodwill to OpenX's ad exchange business. Currently, OpenX has only a small percentage of the ad exchange market, and OpenX's publisher ad server was driven out of the market by Google's conduct and ultimately shut down in 2019.

179. Google's anticompetitive conduct limited publishers' ability to implement competing ad servers and transact on competing exchanges, preventing the OpenX ad server and the OpenX Ad Exchange from gaining the scale necessary to compete effectively.

A. *Effect of Google's Tying Conduct.*

180. Google's tie between AdWords demand and AdX, as well as its tie between real-time bids from AdX and Google's ad server, drove OpenX out of the publisher ad server market and prevented OpenX from competing effectively in the ad exchange market.

181. *First*, because most bids from AdWords were available only to publishers using DFP as their ad server, and because publishers use a single ad server, OpenX's ad server was foreclosed from the market. Simply put, publishers were not willing to forgo the enormous amount of revenue available from AdWords, even if OpenX's ad server offered better terms, more control, better features or lower prices than DFP. As Cadogan—OpenX's co-founder and former CEO—explained in sworn testimony in *United States v. Google*: "to work with the OpenX ad server would require [publishers] saying no to by far the largest source of advertising revenue that was available to them, which was the Google offering" via AdX, and "that's a choice almost no publisher could make because they couldn't go without that large source of revenue".

182. Google further chilled publishers' use of OpenX's ad server because, as explained above, Google made real-time bids from AdX available only to its own ad server. Users of OpenX's ad server could not compare bids from AdX to bids from other demand sources in real time, inhibiting their ability to maximize revenue. Even though OpenX sought to make real-time bids from AdX available to OpenX's ad server, Google did not accept this proposal.

183. Accordingly, OpenX's ad server could not compete effectively with Google's ad server for publisher customers. Although OpenX had a significant share of the ad serving market in 2012, by 2014 its market share had declined materially. As a result, over time, OpenX was forced to reduce its investment in its ad server, further harming its ability to compete. It ultimately shut down its ad server altogether in mid-2019. OpenX was also foreclosed from reentering the ad server market because of Google's anticompetitive conduct.

184. The shutdown of OpenX's ad server in turn also harmed the OpenX Ad Exchange. The OpenX Ad Exchange won more transactions and earned more revenue per transaction when it could submit a real-time bid for an ad space. Prior to the advent of header bidding, the OpenX Ad Exchange could submit real-time bids only to OpenX's ad server given Google's refusal to integrate into DFP real-time bids from third-party ad exchanges, including the OpenX Ad Exchange. Even after the introduction of header bidding, the OpenX Ad Exchange performed better on OpenX's ad server than on DFP, where it had to contend with Last Look, UPR, and DFP's denial of user-specific information to third-party exchanges. Thus, upon the shutdown of OpenX's ad server, the OpenX Ad Exchange lost a source of ad spaces unburdened by Google's anticompetitive conduct.

185. *Second*, the OpenX Ad Exchange could not effectively compete with AdX in attracting publishers or advertisers due to Google's anticompetitive ties. On the sell side, the OpenX Ad Exchange could not give publishers access to most of the valuable advertiser demand offered by AdWords. On the buy side, the OpenX Ad Exchange's inability to attract publishers at scale (because they needed access to AdWords) made it less attractive to other advertisers; and this effect was exacerbated by OpenX's inability to submit real-time bids directly into DFP, or obtain critical data, such as auction data at the scale of AdX. As Cadogan testified, getting only

"a sliver of [AdWords] demand . . . made our job a lot harder" because "we're competing against someone who has a lot more scale in terms of the ad dollars that are sitting behind that exchange." As a result, OpenX could not gain sufficient scale to threaten Google's dominance.

186. OpenX pleaded with Google to sever aspects of its ties, but to no avail. For example, OpenX asked Google to allow OpenX to integrate real-time bids from its ad exchange into DFP. Google rejected OpenX's proposal.

187. Google's tying conduct also harmed its own customers. As this Court has found, "[t]he unique value of real-time access to AdWords through AdX has essentially forced Google's publisher customers into the purchase of a tied product that they either did not want at all, or might have preferred to purchase elsewhere on different terms". Liability Op. at 95 (cleaned up). Likewise, Google "effectively limit[ed] its programmatic open-web advertisers in AdWords to bidding for inventory from publishers that used AdX and DFP. Google did this despite knowing that its advertiser customers would benefit from AdWords' bidding for open-web display ad inventory on non-Google exchanges." *Id.* at 97.

B. *Dynamic Allocation.*

188. Dynamic Allocation (First Look and Last Look) harmed the OpenX Ad Exchange because OpenX was not able to compete effectively against AdX for ad spaces made available through DFP in light of AdX's ability to bid ahead of OpenX in the waterfall, know OpenX's (and all other exchanges') predicted bids, and cherry pick the most valuable ad spaces through First Look. Dynamic Allocation continued to harm the OpenX Ad Exchange after the introduction of header bidding because DFP provided AdX with the winning bids from header bidding auctions and allowed AdX to bid last in an attempt to beat those bids through Last Look.

189. Dynamic Allocation funneled transactions to AdX that OpenX would have won absent Google's anticompetitive conduct. Although the OpenX Ad Exchange distinguished itself as an industry leader in publisher quality, traffic quality and ad quality, Google's Dynamic Allocation rendered it unable to effectively compete. Because Dynamic Allocation allowed AdX to access and to clear more transactions than rival exchanges, AdX had greater insight into how advertisers were bidding than the OpenX Ad Exchange. This greater access allowed AdX to optimize its bidding algorithms and win even more ad spaces than the OpenX Ad Exchange. Conversely, OpenX lost the ability to bid—or even see—highly valued inventory, harming its ability to optimize its bidding strategy. Google's conduct ultimately deprived the OpenX Ad Exchange of the scale and revenue needed to compete effectively against Google.

190. Dynamic Allocation also harmed Google's own customers. As this Court has found, "First Look exacerbated the anticompetitive effect of the unlawful AdX-DFP tie by artificially advantaging AdX within DFP's auction logic at the expense of Google's publisher customers". Liability Op. at 99. Similarly, Last Look "harmed publishers, rival ad exchanges, and advertisers using non-Google ad buying technologies". *Id.*

C. *Sell-Side Dynamic Revenue Share.*

191. Google's SSDRS program allowed AdX to alter its take rate after seeing the winning bid from rival exchanges to boost (or minimize, as the case may be) its net bid, thus allowing AdX to win more of the most valuable ad spaces without sacrificing revenue. This program allowed Google to win ad spaces that it otherwise would have lost to OpenX. Through this conduct, Google funneled transactions away from the OpenX Ad Exchange and to AdX, causing OpenX to lose revenue and scale. SSDRS also harmed Google's "publisher customers' ability to diversify their revenue sources away from Google". Liability Op. at 100.

192. OpenX was not aware of SSDRS. OpenX only discovered the full extent of Google's manipulative conduct upon the filing of the Government's complaints against Google.

D. *Project Poirot.*

193. With the introduction of header bidding, OpenX was able to partially mitigate some of the constraints Google imposed on publishers through its illegal ties. Specifically, it allowed the OpenX Ad Exchange, through a major inventive workaround, to provide real-time bids to publishers that used DFP. As a result, despite Google's continued advantages through Last Look and SSDRS, the OpenX Ad Exchange's market share grew substantially from 2014 to 2015.

194. Project Poirot targeted OpenX by lowering DV360 advertisers' bids to exchanges participating in header bidding, while ensuring that those same advertisers' bids on AdX were not lowered. In 2018, Google launched Poirot 2.0, which decreased DV360 spend on rival ad exchanges by as much as 90%. Google predicted that Poirot 2.0 would decrease revenues to OpenX more than any other ad exchange.

195. Project Poirot dramatically reduced DV360 spend on the OpenX Ad Exchange. By December 2018, OpenX had experienced a 40% decrease in year-over-year DV360 spend on the OpenX Ad Exchange. Most of that decline was diverted to AdX.

196. Project Poirot exacerbated the anticompetitive injuries caused to OpenX by Google's other conduct, which continued in parallel with Project Poirot until at least the fall of 2019. As a result of the compounded effects of Google's conduct, OpenX had to cut costs significantly in the form of reducing the company's staff. Between October 2018 and March 2019, through two rounds of layoffs, OpenX experienced a total reduction of 210 employees representing nearly 50% of OpenX's workforce. This reduction in OpenX's staff harmed OpenX

both publicly and internally. Publicly, such a massive reduction in force suggested to the market that OpenX lacked the resources to support its goals, harming its goodwill, its reputation and its ability to gain new customers. Internally, with fewer staff, OpenX could not innovate or develop new product features at the rate it did before. OpenX also found it harder to acquire talent and lost much of the historical knowledge critical to developing new and better products. Project Poirot, together with Google's other anticompetitive conduct laid out above, ultimately reduced OpenX's ability to compete with Google by significantly reducing OpenX's operations and scale.

197. After Google launched Project Poirot, OpenX's market share in the ad exchange market began to drop substantially. The OpenX Ad Exchange's market share remains affected by the aftermath of Project Poirot.

198. Project Poirot also harmed Google's own customers. Project Poirot exacerbated the anticompetitive effects of Last Look and limited the procompetitive effects of header bidding, which harmed publishers, rival ad exchanges and advertisers. Google also failed to apply Project Poirot to AdX even though AdX deviated from a true second-price auction, which harmed advertisers. Project Poirot further harmed advertisers by weakening competition between rival exchanges and AdX, thereby lessening advertiser choice.

E. *Unified Pricing Rules.*

199. Because Google's anticompetitive conduct diverted millions of transactions from the OpenX Ad Exchange (and other ad exchanges) to AdX, many publishers became concerned about the increasing concentration in the market for ad exchanges and, more specifically, about their increasing reliance on AdX. To try to counter that increase in concentration, many publishers set lower price floors for bids from the OpenX Ad Exchange compared to AdX, in an attempt to shift some transactions back to OpenX. In response, in 2019, Google implemented

UPR, preventing publishers using DFP from setting a higher price floor for DFP compared to other ad exchanges. As a result of UPR, Google again shifted more transactions onto AdX, winning many transactions that OpenX would have won but for UPR. This in turn further contributed to the loss of scale and revenue by the OpenX Ad Exchange. And UPR harmed Google's customers because, as this Court has found, UPR involved Google "using its coercive monopoly power to deprive its publisher customers of a choice that they had previously exercised to promote competition". Liability Op. at 101.

VIOLATIONS ALLEGED

Count I: Monopolization of the Publisher Ad Server Market in Violation of Sherman Act § 2, 15 U.S.C. § 2.

200. Plaintiffs restate, reallege and incorporate by reference each of the allegations set forth in paragraphs 1 through 199 as if fully set forth herein.

201. As this Court has found, "Google has violated Section 2 of the Sherman Act by willfully acquiring and maintaining monopoly power in the open-web display publisher ad server market . . . ." Liability Op. at 1.

202. Publisher ad servers for open-web display advertising worldwide constitute a relevant antitrust market, and Google has monopoly power in that market.

203. Google has unlawfully monopolized the publisher ad server market through the course of exclusionary conduct described herein. Each of Google's actions increased, maintained, or protected its publisher ad server monopoly and/or market power. Although each of Google's acts is anticompetitive in its own right, these interrelated and interdependent actions also have had a cumulative synergistic effect that harmed competition and caused substantial damages to OpenX. Google's anticompetitive conduct includes:

i. Google's tying of real-time bids from AdX to the use of DFP;

ii. Google's tying of AdWords demand to AdX;

iii. First Look;

iv. Last Look;

v. Sell-Side Dynamic Revenue Share;

vi. Project Poirot; and

vii. Unified Pricing Rules.

204. Google's conduct serves no legitimate or pro-competitive purpose that could justify its anticompetitive effects.

205. Google's conduct violated Section 2 of the Sherman Act, which prohibits "monopoliz[ing], or attempt[ing] to monopolize, or combin[ing] or conspir[ing] with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations . . . ." 15 U.S.C. § 2.

206. OpenX was a competitor in the market for publisher ad servers for open-web display advertising.

207. Google's exclusionary conduct foreclosed OpenX's ability to compete in the market for publisher ad servers for open-web display advertising, resulting in the shutdown of OpenX's publisher ad server product. OpenX was harmed by Google's anticompetitive conduct in a manner that the antitrust laws were intended to prevent. OpenX suffered substantial damages and irreparable injury, and such damages and injury will not abate until OpenX is awarded damages and an injunction ending Google's anticompetitive conduct is issued.

Count II: Monopolization of the Ad Exchange Market in Violation of Sherman Act § 2, 15 U.S.C. § 2.

208. Plaintiffs restate, reallege and incorporate by reference each of the allegations set forth in paragraphs 1 through 199 as if fully set forth herein.

209. As this Court has found, "Google has violated Section 2 of the Sherman Act by willfully acquiring and maintaining monopoly power in . . . the open-web display ad exchange market". Liability Op. at 1.

210. Ad exchanges for open-web display advertising worldwide constitute a relevant antitrust market, and Google has monopoly power in that market.

211. Google has unlawfully monopolized the ad exchange market through the course of exclusionary conduct and anticompetitive acts described herein. Each of Google's actions increased, maintained or protected its ad exchange monopoly. Although each of Google's acts is anticompetitive in its own right, these interrelated and interdependent actions also have had a cumulative synergistic effect that further harmed competition and caused substantial damages to OpenX. Google's anticompetitive conduct includes:

i. Google's tying of real-time bids from AdX to the use of Google's ad server;

ii. Google's tying of AdWords demand to AdX;

iii. First Look;

iv. Last Look;

v. Sell-Side Dynamic Revenue Share;

vi. Project Poirot; and

vii. Unified Pricing Rules.

212. Google's conduct serves no legitimate or pro-competitive purpose that could justify its anticompetitive effects.

213. Google's conduct violated Section 2 of the Sherman Act, which prohibits "monopoliz[ing], or attempt[ing] to monopolize, or combin[ing] or conspir[ing] with any other

person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations . . . ." 15 U.S.C. § 2.

214. OpenX is a competitor in the market for ad exchanges for open-web display advertising.

215. Google's exclusionary conduct foreclosed OpenX's ability to compete in the market for ad exchanges for open-web display advertising. OpenX was harmed by Google's anticompetitive conduct in a manner that the antitrust laws were intended to prevent. OpenX suffered and will continue to suffer substantial damages and irreparable injury, and such damages and injury will not abate until OpenX is awarded damages and an injunction ending Google's anticompetitive conduct is issued.

Count III: Unlawful Tying of AdX and Google's Ad Server in Violation of Sherman Act §§ 1 and 2, 15 U.S.C. §§ 1, 2.

216. Plaintiffs restate, reallege and incorporate by reference each of the allegations set forth in paragraphs 1 through 199 as if fully set forth herein.

217. As this Court has found, Google "has unlawfully tied its publisher ad server (DFP) and ad exchange (AdX) in violation of Sections 1 and 2 of the Sherman Act". Liability Op. at 1.

218. As this Court has found, "publisher ad servers and ad exchanges are two separate products that are not reasonably interchangeable". Liability Op. at 91 (quotation marks omitted). They "serve different functions, use different pricing structures, and are recognized as different products by industry participants". *Id.* at 92.

219. As this Court also found, "the policy and technology restrictions that Google has placed within AdX conditioned purchase of the tying product [AdX] upon purchase of the tied product [DFP]". Liability Op. at 92 (cleaned up). Specifically, "Google's restriction of AdX's

real-time bidding to DFP required Google's publisher customers who wanted to use AdX's core feature to use DFP". *Id.*

220. As this Court further found, "Google has possessed sufficient economic power in the tying product market to restrain competition in the tied product market" because "Google has monopoly power in the open-web display ad exchange market". Liability Op. at 95 (quotation marks omitted).

221. This Court also found that "the tying of AdX and DFP has had a not insubstantial impact on interstate commerce". Liability Op. at 96 (quotation marks omitted).

222. Google's tying arrangement substantially foreclosed competition in the publisher ad server market. Google's tying arrangement caused OpenX substantial damages as a direct and proximate cause of this unlawful conduct because Google prevented OpenX from gaining publisher customers and gaining scale for its publisher ad server product for reasons that have nothing to do with the merits of Google's ad server. Google's tying arrangement further caused OpenX substantial damages as a direct and proximate cause of this unlawful conduct as it ultimately caused the shutdown of OpenX's ad server product and foreclosed OpenX from staying in or reentering that market. Google's tying arrangement further caused OpenX substantial damages as a direct and proximate cause of this unlawful conduct as it harmed the OpenX Ad Exchange product because OpenX lost the benefit of providing its customers with an integrated ad server and ad exchange product.

REQUEST FOR RELIEF

223. Wherefore, Plaintiffs respectfully request that the Court enter judgment in favor of OpenX and against Google:

i. issuing an injunction prohibiting Google's anticompetitive conduct and mandating that Google take all necessary steps to cease such conduct and restore competition;

ii. awarding a declaration that the restraints complained of herein are unlawful;

iii. awarding, as monetary relief pursuant to 15 U.S.C. § 15(a), compensatory, consequential and punitive (including treble) damages for injuries directly and proximately caused to OpenX by Google, as described herein, according to proof, as well as the costs of suit, including attorneys' fees, incurred herein;

iv. awarding any other equitable relief necessary to prevent and remedy Google's anticompetitive conduct; and

v. granting such other and further relief as the Court deems just and proper.

REQUEST FOR A JURY TRIAL

224. Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiffs demand a trial by jury on all of the claims asserted in this Complaint that are so triable.

Dated: August 4, 2025

Respectfully submitted,

/s/ Christine Connell

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Counsel for Plaintiffs OpenX Technologies, Inc., and OpenX Ltd.

JS 44 (Rev. 03/24)

CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. *(SEE INSTRUCTIONS ON NEXT PAGE OF THIS FORM.)*

I. (a) PLAINTIFFS

OpenX Technologies, Inc.; OpenX Ltd.

(b) County of Residence of First Listed Plaintiff Los Angeles County, CA
(EXCEPT IN U.S. PLAINTIFF CASES)

(c) Attorneys *(Firm Name, Address, and Telephone Number)*
Yonatan Even - Cravath, Swaine & Moore LLP
375 Ninth Avenue, New York, New York 10001
Telephone: (212) 474-1000

DEFENDANTS

Google LLC

County of Residence of First Listed Defendant Santa Clara County, CA
(IN U.S. PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE TRACT OF LAND INVOLVED.

Attorneys *(If Known)*

II. BASIS OF JURISDICTION *(Place an "X" in One Box Only)*

- ☐ 1 U.S. Government Plaintiff
- ☒ 3 Federal Question *(U.S. Government Not a Party)*
- ☐ 2 U.S. Government Defendant
- ☐ 4 Diversity *(Indicate Citizenship of Parties in Item III)*

III. CITIZENSHIP OF PRINCIPAL PARTIES *(Place an "X" in One Box for Plaintiff and One Box for Defendant)*

(For Diversity Cases Only)

	PTF	DEF		PTF	DEF
Citizen of This State	☐ 1	☐ 1	Incorporated *or* Principal Place of Business In This State	☐ 4	☐ 4
Citizen of Another State	☐ 2	☐ 2	Incorporated *and* Principal Place of Business In Another State	☐ 5	☐ 5
Citizen or Subject of a Foreign Country	☐ 3	☐ 3	Foreign Nation	☐ 6	☐ 6

IV. NATURE OF SUIT *(Place an "X" in One Box Only)*

Click here for: Nature of Suit Code Descriptions.

CONTRACT
- ☐ 110 Insurance
- ☐ 120 Marine
- ☐ 130 Miller Act
- ☐ 140 Negotiable Instrument
- ☐ 150 Recovery of Overpayment & Enforcement of Judgment
- ☐ 151 Medicare Act
- ☐ 152 Recovery of Defaulted Student Loans (Excludes Veterans)
- ☐ 153 Recovery of Overpayment of Veteran's Benefits
- ☐ 160 Stockholders' Suits
- ☐ 190 Other Contract
- ☐ 195 Contract Product Liability
- ☐ 196 Franchise

REAL PROPERTY
- ☐ 210 Land Condemnation
- ☐ 220 Foreclosure
- ☐ 230 Rent Lease & Ejectment
- ☐ 240 Torts to Land
- ☐ 245 Tort Product Liability
- ☐ 290 All Other Real Property

TORTS

PERSONAL INJURY
- ☐ 310 Airplane
- ☐ 315 Airplane Product Liability
- ☐ 320 Assault, Libel & Slander
- ☐ 330 Federal Employers' Liability
- ☐ 340 Marine
- ☐ 345 Marine Product Liability
- ☐ 350 Motor Vehicle
- ☐ 355 Motor Vehicle Product Liability
- ☐ 360 Other Personal Injury
- ☐ 362 Personal Injury - Medical Malpractice

PERSONAL INJURY
- ☐ 365 Personal Injury - Product Liability
- ☐ 367 Health Care/ Pharmaceutical Personal Injury Product Liability
- ☐ 368 Asbestos Personal Injury Product Liability

PERSONAL PROPERTY
- ☐ 370 Other Fraud
- ☐ 371 Truth in Lending
- ☐ 380 Other Personal Property Damage
- ☐ 385 Property Damage Product Liability

CIVIL RIGHTS
- ☐ 440 Other Civil Rights
- ☐ 441 Voting
- ☐ 442 Employment
- ☐ 443 Housing/ Accommodations
- ☐ 445 Amer. w/Disabilities - Employment
- ☐ 446 Amer. w/Disabilities - Other
- ☐ 448 Education

PRISONER PETITIONS

Habeas Corpus:
- ☐ 463 Alien Detainee
- ☐ 510 Motions to Vacate Sentence
- ☐ 530 General
- ☐ 535 Death Penalty

Other:
- ☐ 540 Mandamus & Other
- ☐ 550 Civil Rights
- ☐ 555 Prison Condition
- ☐ 560 Civil Detainee - Conditions of Confinement

FORFEITURE/PENALTY
- ☐ 625 Drug Related Seizure of Property 21 USC 881
- ☐ 690 Other

LABOR
- ☐ 710 Fair Labor Standards Act
- ☐ 720 Labor/Management Relations
- ☐ 740 Railway Labor Act
- ☐ 751 Family and Medical Leave Act
- ☐ 790 Other Labor Litigation
- ☐ 791 Employee Retirement Income Security Act

IMMIGRATION
- ☐ 462 Naturalization Application
- ☐ 465 Other Immigration Actions

BANKRUPTCY
- ☐ 422 Appeal 28 USC 158
- ☐ 423 Withdrawal 28 USC 157

INTELLECTUAL PROPERTY RIGHTS
- ☐ 820 Copyrights
- ☐ 830 Patent
- ☐ 835 Patent - Abbreviated New Drug Application
- ☐ 840 Trademark
- ☐ 880 Defend Trade Secrets Act of 2016

SOCIAL SECURITY
- ☐ 861 HIA (1395ff)
- ☐ 862 Black Lung (923)
- ☐ 863 DIWC/DIWW (405(g))
- ☐ 864 SSID Title XVI
- ☐ 865 RSI (405(g))

FEDERAL TAX SUITS
- ☐ 870 Taxes (U.S. Plaintiff or Defendant)
- ☐ 871 IRS—Third Party 26 USC 7609

OTHER STATUTES
- ☐ 375 False Claims Act
- ☐ 376 Qui Tam (31 USC 3729(a))
- ☐ 400 State Reapportionment
- ☒ 410 Antitrust
- ☐ 430 Banks and Banking
- ☐ 450 Commerce
- ☐ 460 Deportation
- ☐ 470 Racketeer Influenced and Corrupt Organizations
- ☐ 480 Consumer Credit (15 USC 1681 or 1692)
- ☐ 485 Telephone Consumer Protection Act
- ☐ 490 Cable/Sat TV
- ☐ 850 Securities/Commodities/ Exchange
- ☐ 890 Other Statutory Actions
- ☐ 891 Agricultural Acts
- ☐ 893 Environmental Matters
- ☐ 895 Freedom of Information Act
- ☐ 896 Arbitration
- ☐ 899 Administrative Procedure Act/Review or Appeal of Agency Decision
- ☐ 950 Constitutionality of State Statutes

V. ORIGIN *(Place an "X" in One Box Only)*

☒ 1 Original Proceeding ☐ 2 Removed from State Court ☐ 3 Remanded from Appellate Court ☐ 4 Reinstated or Reopened ☐ 5 Transferred from Another District *(specify)* ☐ 6 Multidistrict Litigation - Transfer ☐ 8 Multidistrict Litigation - Direct File

VI. CAUSE OF ACTION

Cite the U.S. Civil Statute under which you are filing ***(Do not cite jurisdictional statutes unless diversity)***:
15 U.S.C. §§ 1, 2, 15(a)

Brief description of cause:
Monopolization, Unlawful Tying

VII. REQUESTED IN COMPLAINT:

☐ CHECK IF THIS IS A **CLASS ACTION** UNDER RULE 23, F.R.Cv.P.

DEMAND $ To be determined

CHECK YES only if demanded in complaint:
JURY DEMAND: ☒ Yes ☐ No

VIII. RELATED CASE(S) IF ANY

(See instructions): JUDGE Leonie M. Brinkema DOCKET NUMBER 1:23-cv-00108 (LMB) (JFA)

DATE Aug 4, 2025

SIGNATURE OF ATTORNEY OF RECORD /s/ Christine Connell

FOR OFFICE USE ONLY

RECEIPT # _____ AMOUNT _____ APPLYING IFP _____ JUDGE _____ MAG. JUDGE _____