EXHIBIT 118

PUBLIC

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

UNITED STATES OF AMERICA, ET AL., **Plaintiffs,** **v.** **GOOGLE LLC,** **Defendant.**	Case No. 1:23-cv-00108 (LMB/JFA)

EXPERT REPORT OF MARK A. ISRAEL

January 23, 2024

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SUBJECT TO PROTECTIVE ORDER

- As discussed in more detail below, despite allegedly monopolizing the industry, Google's fees have been flat or decreasing over time even as its quality has increased (meaning quality-adjusted prices have fallen) and output has been increasing. Moreover, Google's fees are not systematically higher than its competitors' fees—in fact, Google's fees are often *lower*. Plaintiffs emphasize that AdX's fee is marginally higher than the average among competing exchanges, neglecting that prices across different components of the ad tech stack are interconnected and that Google's prices across the entire ad tech stack are in line with if not lower than competitors.

Collectively, this evidence is much more consistent with Google's ad tech business succeeding in the face of ongoing competition than with Google monopolizing the industry as Plaintiffs claim.

54. *Google's integration of ad tech components creates procompetitive incentives (Section VI)*: As noted above, Google's ad tech products and those of its rivals serve the important function of facilitating the sale of advertising inventory from publishers of digital properties where users see ads to advertisers in a way that ultimately benefits users. These benefits occur because advertisements targeted to specific users are shown to those users as they visit specific websites, apps, and other digital properties, and because the revenue that publishers earn from selling advertising inventory ultimately funds content that users find attractive and can often obtain at no monetary cost.

55. This matching process is extraordinarily complex, requiring millions of impressions to be matched to advertisers in fractions of a second, with the facilitation of such matches between the two sides of the marketplace being the raison d'être of the industry. Given such complexity, tight integration across all parts of the ad tech stack contributes to improved match quality, and simplistic analogies to less complicated marketplaces (even two-sided ones) do not provide

relevant economic intuition. Far from being anticompetitive, Google's ad tech offerings facilitate an efficient matching process and protect the open web ecosystem against fraud, spam, and other forms of abuse, thereby delivering tremendous value to advertisers, publishers, and users.

56. The procompetitive incentives generated by Google's integration arise from fundamental economic principles:

- Ad tech consists of several components that together sit between advertisers and publishers and collectively facilitate transactions between the two. These components are *complements* to each other, in the sense that an increase in the value to customers of one component increases demand for other components. It is well understood in economics that the integration of complementary assets (whether in a vertical supply chain, a two-sided market, or otherwise) can generate significant procompetitive effects, including lower prices, improved quality, and greater investment and innovation. These procompetitive effects arise because integrated firms more fully internalize the effects of their actions across the entire platform. For example, if Google invests in improvements to its buying tools that attract more advertisers, Google benefits not just through more demand for its buying tools, but also from processing more transactions through its exchange and from more demand for publisher ad server services. This internalization of benefits from all sides creates incentives to invest in higher-quality products on all sides.

- Relatedly, by virtue of providing tools to both sides of the marketplace, Google has the incentive and ability to internalize the interests of both advertisers and publishers. In some cases, Google may take actions that primarily benefit advertisers. In other cases, Google may take actions that primarily benefit publishers. In either case, these actions

must be seen in the context of ad tech's role as a two-sided platform, one aspect of which is to balance the interests of participants on both sides, including in cases when actions may help one side but not the other, thus requiring a decision about how to maximize overall value. This balancing ultimately serves to expand output and benefit both advertisers and publishers by creating a well-functioning marketplace that creates efficient matches.

- Because integration eliminates the transaction costs that often arise when separate firms work together, integrated components within a single firm often work better together than components at separate firms, and efficient coordination between components often occurs more quickly within a single firm. Such integration can generate especially large benefits in the present case given the extreme complexity of the matching problem that must be solved in fractions of a second.

The points in this paragraph are fundamental principles of economics and thus hold regardless of how the relevant market is defined (whether as a single two-sided transaction market, as is appropriate, or as individual component markets as Plaintiffs allege).

57. Given these benefits of integration, many—but not all—ad tech providers choose to provide tools at multiple layers of the ad tech stack as part of an integrated operation within a single firm. Indeed, several of Google's closest rivals more tightly integrate their ad tech products in several important respects than does Google. For instance, both Meta and Amazon have adopted a tightly integrated approach: They both operate their own ad server that is not made available to others, and the demand for their ad inventory comes primarily from their own buy-side tools. Microsoft also operates an integrated ad tech stack, offering sell-side and buy-side services, including as a result of its acquisition of Xandr. Conversely, other ad tech

more than 143,000 publisher sites (accounting for more than 1.57 billion webpages in total).[67] Ads blocked or removed include (millions of) cases of adult or inappropriate content, misrepresentation, and dangerous products or services; pages taken action against include (millions of) cases of sexual and other shocking content.[68] Building on Google's long-standing "why this ad?" feature, in 2022 Google also launched "My Ad Center," which provides users more control over their ad experience (such as the ability to block certain types of ads, or to turn off personalized ads altogether).[69] Google Ad Manager, Google Ads, and DV360 all have frequency capping features that set limits on how many times an ad can be shown to the same user.[70]

131. As shown in Figure 6 below, Google's engineering expenditures for its display business specifically on ads safety and privacy initiatives totaled more than $600 million over the 2017-2022 period, growing from $36 million in 2017 to $182 million in 2022.[71] Google's incentive and ability to implement these kinds of user protections is inherently linked to its integration across the ad tech stack and broader involvement in user-driven internet businesses.

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67 Ibid.

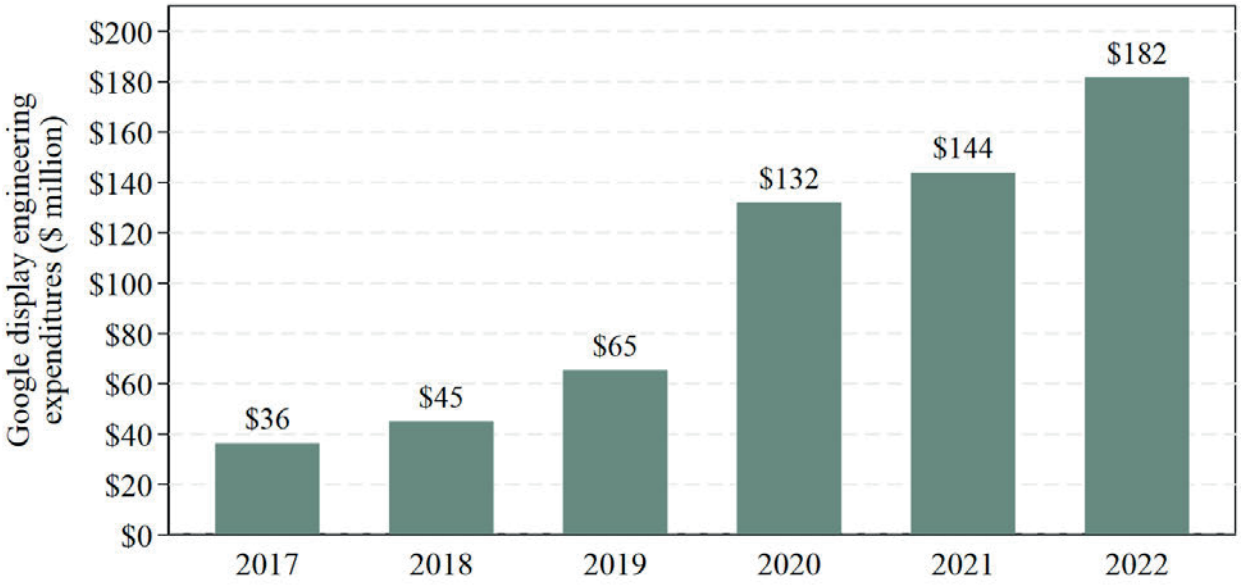
68 See Table 28 and Table 29 in the appendix below.

69 Jerry Dischler, "Your ads, your choice," Google The Keyword, October 20, 2022.

70 Google, "Line items: Set frequency caps for a line item," 2023 (Google Ad Manager); Google, "Frequency capping: Definition," 2023 (Google Ads); and Google, "Set frequency caps: Limit the number of times people see your ads," 2023 (DV360).

71 Figure 6 is limited to the ads privacy and safety engineering expenditures directly listed in the available Google profit and loss statements for its display business. As I understand it, those numbers are likely underestimates of the true amount Google spends on ads privacy and safety. For instance, Google's ads privacy and safety initiatives also require significant machine costs (see, e.g., GOOG-AT-MDL-008228528 at -540, projecting $68 million in 2022 and $91 million in 2023 for display ads privacy and safety "C&S [compute and storage]" machine costs (see Figure 101 in the appendix for 2022 ads privacy and safety expenditures including these costs)).

Figure 6: Google Display Ads Privacy and Safety Engineering Expenditures, 2017-2022



Sources: GOOG-DOJ-AT-02647850 (Google 2017-2018 P&L), GOOG-DOJ-AT-02649868 (Google 2019 P&L), and GOOG-DOJ-AT-02647839 (Google 2020-2022 P&L)
Notes: The figure plots expenditures under the "Privacy and User Trust" line item in the 2017-2018 P&Ls, and the "Ads Privacy and Safety" or "APaS" line item in the 2019-2022 P&Ls. The 2022 estimate is labeled as a forecast in the source document.

132. Although the primary focus of my analysis in this report is the direct customers of Google's ad tech offerings (i.e., advertisers and publishers), it is also worth noting the benefits that Google's ad tech business delivers to users, above and beyond the user protections explained above. User engagement with publisher content is what creates ad impressions that publishers can sell to advertisers, who buy ads in order to reach their desired audiences. When publishers can effectively monetize their content with ads, they have stronger incentives to continue creating content and offering it to users at a discounted or even zero cost.[72] In addition, more

[72] See generally John Deighton, Leora Kornfeld, and Marlon Gerra, "Economic Value of the Advertising-Supported Internet Ecosystem," IAB, January 2017 (hereinafter *Deighton et al. (2017)*).

relevant ads help users discover and stay connected to the products and services they value as consumers.[73]

C. INDUSTRY TRENDS ILLUSTRATE THAT PLAINTIFFS' VIEW OF THE INDUSTRY IS NARROW AND OUTDATED

133. In Sections IV and V below, I address the specific flaws in Plaintiffs' approach to defining relevant markets in this case (Section IV), as well as Plaintiffs' mistaken conclusion that Google has monopoly power in those alleged markets (Section V). Before getting into those details, however, it is important to provide some simple but important industry context that demonstrates the numerous ways in which Plaintiffs' view of the industry—and market definitions that rely upon that view—is outdated and contrary to reality. Put simply, the ad tech industry has all the hallmarks of an extremely well-performing one, and Plaintiffs do nothing at all to establish a but-for world that would be even better in the absence of Google's challenged conduct. Rather, they create the appearance of harm only by artificially sub-dividing the market and ignoring entire swaths of competition.

134. The focus of Plaintiffs' theories is alleged anticompetitive conduct "in the market for open web display advertising transactions."[74] Plaintiffs define "open web display advertising" as ads on "websites whose inventory is sold through ad tech intermediaries that offer inventory from multiple websites," excluding ads that appear on the websites of "social media companies like Facebook and Snapchat" that "operate under a different 'closed web' (or 'walled garden') model," as well as "search ads (e.g., sponsored results in a search engine), video ads (e.g.,

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73 See, e.g., Jiwoong Shin and Jungju Yu (2021), "Targeted Advertising and Consumer Inference," *Marketing Science*, 40(5): 900-922, p. 900 (stating that "[r]esearch has shown that digital targeting meaningfully improves consumers' responses to advertisements").

74 *DOJ Complaint*, n. 4.

innovative technology, would take away much of the prize from innovation and thus greatly reduce the incentives to innovate.[702]

VII. AN ECONOMIC FRAMEWORK FOR EVALUATING PLAINTIFFS' CLAIMS

499. The previous sections described why it is procompetitive to combine complementary products and thus why the challenged conduct in this case—much of which revolves around ways in which Google has integrated its various ad tech offerings—is procompetitive. I also explained that Google's choices regarding integration and openness (i.e., the extent to which Google interoperates with other ad tech providers) reflect a competitive balance in competing with more closed providers like Meta and Amazon while also competing with more open providers.

500. In this section, I turn to Plaintiffs' claims that the challenged conduct is anticompetitive and explain why, in considering such claims, it is critical to distinguish competition from anticompetitive exclusion. Plaintiffs' experts fail to do so. Instead, their claims would impose on Google a duty to deal with rivals which would reduce investment incentives and *harm* competition.

A. AN OVERVIEW OF PLAINTIFFS' THEORY OF HARM

501. Plaintiffs allege that Google undertook a series of actions that collectively harmed competition. Table 9 below summarizes the elements of Google's conduct that Plaintiffs' experts analyze. As the table summarizes, Plaintiffs' experts primarily claim that the effects of

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[702] See, e.g., *Bloom et al. (2019)*, p. 166 (describing knowledge spillovers as a "central market failure": "If one firm creates something truly innovative, this knowledge may spill over to other firms that either copy or learn from the original research—without having to pay the full research and development costs.").

B. PLAINTIFFS' ANALYSIS IMPLIES THAT GOOGLE HAS AN EXPANSIVE DUTY TO DEAL WITH ITS RIVALS, A STANDARD THAT WOULD HARM INVESTMENT INCENTIVES AND THUS WELFARE

517. Plaintiffs' experts' claims imply that Google has an expansive duty to deal with rivals and, in many cases, an obligation not only to deal with rivals, but to redesign its products to facilitate this duty to deal.

518. Specifically:

- Plaintiffs' experts claim that Google provided unrestricted access to Google Ads exclusively to AdX.[736] The claim that this conduct is anticompetitive implies that Google has an obligation to make Google Ads demand available to and integrate with third-party ad exchanges in the same way Google Ads is integrated with Google's ad exchange.[737] Providing such access would not just require Google to contract with rival exchanges, but to modify its Google Ads product to facilitate such interactions, making it even more likely to harm investment incentives and welfare than simpler duty-to-deal claims that do not require technological changes to the products in question.

- Plaintiffs' experts claim that Google provided access to real-time bids from AdX exclusively to DFP.[738] The claim that this conduct is anticompetitive would require Google to integrate AdX with third-party publisher ad servers in the same way AdX is integrated with Google's publisher ad server in order to make real-time bids from AdX

736 See, e.g., *Lee Report*, § VII.B.

737 It is noteworthy that Google already allows rival ad exchanges access to Google Ads demand through AwBid, but Plaintiffs' experts assert that this access is insufficient (*Lee Report*, § VII.B.3).

738 See, e.g., *Lee Report*, § VII.C.

accessible to other publisher ad servers.[739] Providing such access would not just require Google to contract with rival publisher ad servers, but to modify its AdX product to facilitate such interactions, again meaning any requirement to do so would be particularly likely to harm investment incentives and welfare.

- Plaintiffs' experts argue that Google advantaged AdX by applying dynamic allocation to AdX, but not to rival ad exchanges.[740] The claim that this conduct is anticompetitive requires Google to integrate rival ad exchanges into dynamic allocation and give them equal treatment to Google's own demand.[741] Integrating other ad exchanges into Google's dynamic allocation would not just require Google to contract with rival ad exchanges, but to modify DFP to facilitate such integration, again making any requirement to do so particularly harmful.

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739 It is noteworthy that Google already allows rival publisher ad servers access to AdX through AdX Direct, but Plaintiffs' experts assert that this access is insufficient (*Lee Report*, § VII.C.3).

740 See, e.g., *Lee Report*, § VII.D.1.

741 It is noteworthy that Google did in fact incorporate certain other ad exchanges into dynamic allocation through Open Bidding (f/k/a Exchange Bidding, originally developed in 2015, launched in alpha in 2016, and launched for general use in 2018) and then eventually deprecated dynamic allocation when it transitioned to a unified first price auction (see, e.g., *Lee Report*, n. 949 and ¶¶ 678-679). But Prof. Lee implies that the fact that Google did not do so *more quickly* reflects harm to competition (*Lee Report*, n. 1187 ("For example, alternatives include allowing Google Ads to bid on rival exchanges for a broader set of impressions at the same margins as levied on AdX, providing rival publisher ad servers the same access to real-time bids from AdX as provided to DFP, granting rival exchanges access to first- and last-look advantages within DFP *from an earlier point in time*, and allowing all publisher customers to set variable pricing floors across demand sources within DFP." (emphasis added))).

519. Such an expansive duty to deal with rivals is likely to have substantial adverse effects on investment incentives.[742] As Prof. Lee acknowledges:[743]

> By *developing new products* that are valued by customers and *significantly differentiated from alternatives*, a firm may obtain substantial market power in a relevant antitrust market and subsequently earn profits that provide a return on its initial investment. *The prospect of these economic returns is one of the primary incentives that drive firms to innovate and improve their products in ways that benefit customers*.

520. Imposing a duty to deal on firms inhibits their ability to differentiate themselves from rivals and thus reduces the returns that those firms can earn from their investments. A reduction in investment returns can therefore be expected to reduce firms' incentives to undertake those investments in the first place, to the detriment of all marketplace participants who benefit from the behavior.

C. DISTINGUISHING COMPETITION FROM EXCLUSION AND FORECLOSURE

521. Throughout their Complaint, Plaintiffs confuse harm to competitors with harm to competition.[744] Plaintiffs' experts similarly focus on the effect of the challenged conduct on rivals.[745] The essence of competition is to take actions that seek to win sales away from

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742 See generally Section VI.C above.

743 *Lee Report*, ¶ 552 (emphasis added; internal notes omitted). See also *Lee Report*, ¶ 826 ("Firms have an incentive to offer products that are more attractive and valuable to their customers, as this helps to differentiate themselves from their rivals and expand their customer base.")

744 As one example among several others, Plaintiffs claim that Google's Open Bidding program, which gave publishers an alternative *option* to conduct real-time auctions among exchanges instead of header bidding, "stunted [the] adoption and growth [of header bidding]" (*DOJ Complaint*, ¶ 184). Developing an alternative product and offering it to customers is a plain and basic form of *competition*, even though it may increase the competitive pressure faced by rivals.

745 *Lee Report*, § VII; *Abrantes-Metz Report*, § VIII; and *Weintraub Report*, §§ V-VI.

To be clear, Plaintiffs' experts also assert that Google's conduct harmed competition and customers (*Lee Report*, § VIII; *Abrantes-Metz Report*, § IX; and *Weintraub Report*, § VII). I explain why those conclusions are incorrect in Section VIII below.