EXHIBIT 33

REDACTED

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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sound economic framework for assessing market power or competitive effects.[421] In short, because shares within Plaintiffs' proposed markets cannot predict basic market outcomes like price trends and relative price levels, there is little reason to think that they can be reliable indicators of monopoly power.

Table 8: DFP, AdX, and Google Ads Average Prices Over Time

Year	DFP ($/1,000 billed units)	DFP (% fee on $2 CPM impression)	AdX Open Auction (% fee)	Google Ads (% fee)	Total (for $2 CPM impression)
2009	--	--	20%	14%	33%
2011	--	--	20%	14%	33%
2014	$0.033	1.7%	--	15%	34%
2015	$0.031	1.5%	20%	14%	33%
2016	$0.030	1.5%	20%	14%	32%
2017	$0.028	1.4%	20%	10%	30%
2018	$0.026	1.3%	20%	12%	31%
2019	$0.027	1.3%	20%	11%	31%
2020	$0.023	1.2%	20%	13%	32%
2021	$0.027	1.4%	20%	14%	33%
2022	$0.027	1.3%	20%	13%	31%

Sources: GOOG-AT-MDL-DATA-000561426 to -535 (DFP RFP 243 data), GOOG-AT-MDL-DATA-000066537 to -482007, GOOG-AT-MDL-DATA-000508827 to -58886, and GOOG-AT-MDL-DATA-000561536 to -4882 (AdX RFP 243 data), GOOG-AT-MDL-DATA-000486626 to -8277 (Google Ads RFP 243 data), GOOG-AT-MDL-DATA-000561031 to -262 (XPP-M data), GOOG-DOJ-03065440 at -444-445 (for 2009 AdX and Google Ads fees), GOOG-DOJ-AT-02643917 at -951 (for 2011 AdX and Google Ads fees), and GOOG-DOJ-AT-00569936 (for 2014 Google Ads fee)

Notes:

[1] The DFP fee is calculated among publishers paying ad serving fees. Billed units are approximately equivalent to impressions.

[2] The Google Ads fee is the average fee for Google Ads' purchases via AdX, averaged across two available data sources (RFP 243 and XPP-M). In each data source, the Google Ads fee is calculated indirectly by subtracting an estimate of the standalone AdX fee from the combined Google Ads and AdX fee available in the data.

[3] The total column assumes a DFP fee of $0.033 per thousand billed units in 2009 and 2011, and an AdX fee of 20% in 2014.

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[421] Plaintiffs and their experts may claim that the price effects of Google's alleged monopoly power in publisher ad serving are felt elsewhere, such as ad exchanges (where prices are comparatively higher) (see, e.g., *Lee Report*, n. 6). But AdX's fee has not meaningfully increased since its inception even as Plaintiffs allege that DFP's share has grown to approximately 90 percent; moreover, any such claim simply underscores the need to think about competition (and fees) across the entirety of the ad tech stack, as opposed to carving it up into narrow pieces.

- A 2021 document summarizes areas of planned investment, including supporting additional ad formats, auction optimizations to grow publisher payout, and support for industry initiatives to provide greater transparency regarding programmatic transactions.[672]

478.   As a summary metric of Google's continuous investments in its ad tech offerings (the selected examples above are far from comprehensive), Figure 66 plots the number of unique product launches by year from 2016 to 2022 as reflected in Google's Ariane-related "launch calendars."[673] As shown in the figure, the number of product launches exceeds 1,600 in every year—that is, more than four product launches each day of the year (on average). Such a large number of launches—more than 13,000 over the 2016 to 2022 period—is more evidence of Google's ongoing efforts to invest in and improve its products.

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[672]   GOOG-DOJ-AT-00037032.

[673]   See Robert J. McCallum Letter to Kaitlyn E. Barry and Kelly D. Garcia (July 20, 2023).

Figure 66: Google Display Product Launches from Ariane Launch Calendars, 2016-2022
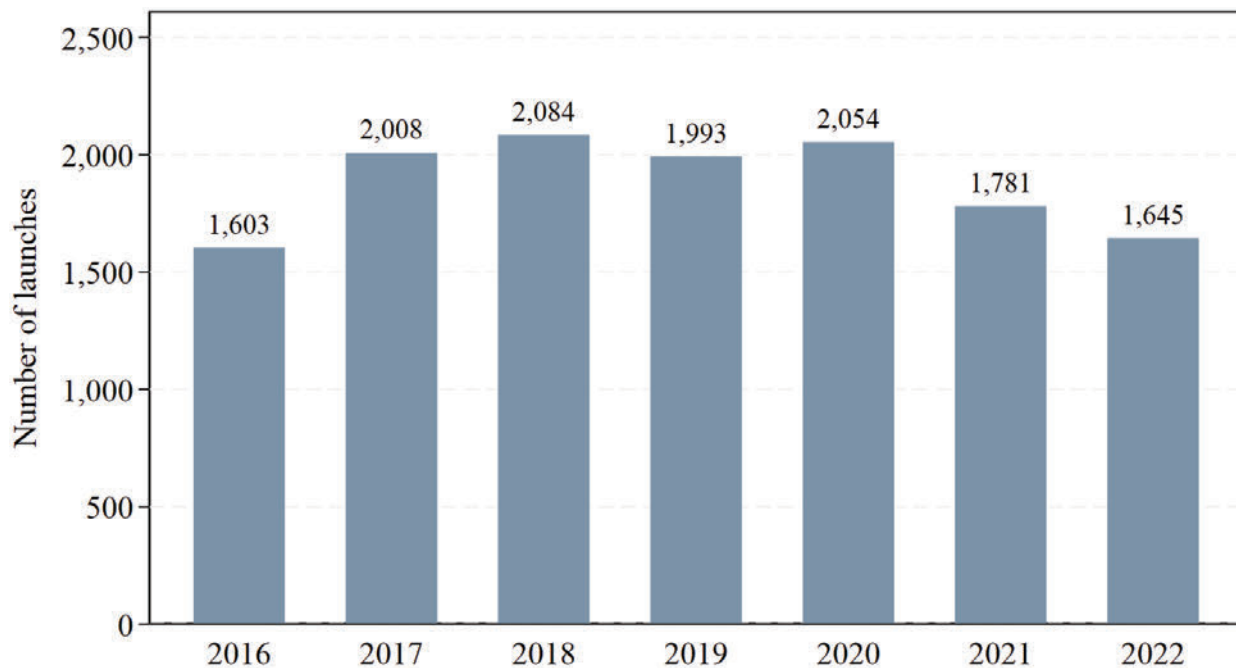
Sources: Exhibits A-H of Robert J. McCallum Letter to Kaitlyn E. Barry and Kelly D. Garcia (July 20, 2023)
Notes: Launches are defined as unique Ariane-launch IDs.

3. Lowering prices when complementary products are priced jointly

479. Among the most fundamental economic teachings about complementary products, including but not limited to ad tech components, is that if they are priced separately, prices will tend to exceed the prices that would obtain if the products were instead priced jointly. In the context of complements along a vertical chain, this phenomenon is known as "double marginalization" (or, synonymously, "double markups"),[674] whereas in the context of pricing complements in other settings it is known as the "Cournot complements" pricing problem. [675] In

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[674] See, e.g., *Carlton and Perloff (2005)*, pp. 415-417; and Elisa Duran-Micco and Jeffrey M. Perloff (2022), "How Large Are Double Markups?," *International Journal of Industrial Organization*, 85(102885): 1-22 (hereinafter *Duran-Micco and Perloff (2022)*), p. 16 (finding that "double markups are enormous").

[675] See, e.g., *O'Brien (2008)*, p. 48 (stating that "[t]he fundamental insight emerging [from] the Cournot complements model is that independent pricing by producers of complements leads to higher prices and lower output than joint pricing").

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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

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[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))).

(b)   *Publishers can access AdX without going through DFP*

653.   In addition, publishers *can* sell their inventory via AdX even if they do not use DFP. One option for publishers using other publisher ad servers (besides DFP) to accept bids that come from AdX (and thus to sell their ad inventory via AdX) is by using AdX Direct tags. As I understand it, AdX Direct tags are pieces of code that publishers can place on their websites that allow them to request demand from AdX (even if those publishers use third-party ad servers).[944] Plaintiffs allege that AdX Direct functionality is degraded relative to calling AdX from DFP, claiming that calling AdX from a third-party ad server does not result in a live, real-time bid but instead returns an ad.[945] But this characterization misconstrues how AdX and DFP historically interoperated, with AdX similarly returning an ad (and not a bid) when called by DFP.[946] Moreover, to my knowledge, publishers *can* receive real-time demand via AdX Direct, but Google policy limits publishers from then placing the returned ads into additional auction-like

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[944]   See, e.g., Google, "Generate Ad Exchange ad tags," 2023.

[945]   *DOJ Complaint*, ¶ 104 (stating that "Google required publishers to use its ad server to obtain real-time bids from its ad exchange. If a publisher chose not to use DFP, it was relegated to selling impressions to AdX at a floor price based on historical average prices."). See also *Lee Report*, ¶ 640 ("[I]f used within a rival publisher ad server, AdX would return only an ad, but not the bid price") and ¶ 631 ("Google has historically placed restrictions on the access to and use of AdX real-time bids for rival publisher servers"); and *Abrantes-Metz Report*, ¶ 413 ("publishers not using DFP do not receive real-time bids from AdX").

[946]   See, e.g., GOOG-AT-MDL-012324145 (describing a potential AdX integration with a third-party ad server, including providing an ███████████████████████████████████████ to which a comment responds "We don't even do that for DFP. [Dynamic Allocation] doesn't need that to work"); and GOOG-DOJ-15768395 at -408 ███████████████████████████████████████

processes for determining the winner of the publishers' impressions.[947] Plaintiffs have certainly

not shown that this nuanced distinction harms ad server competition.

654.   Publishers have demonstrated that selling via AdX Direct is a viable way to monetize

their inventory. According to AdX data produced in this case, AdX Direct accounted for more

than 10 percent of total annual U.S. AdX impressions through 2019.[948] Although publishers' use

of AdX Direct has fallen substantially in recent years, the program remains available to

publishers. In other words, Google continues to offer publishers not using DFP a viable way to

sell their inventory via AdX, with the recent decline in the usage of AdX Direct being consistent

with the integration of DFP and AdX creating increasing benefits for publishers.[949]

655.   Furthermore, I understand that one significant obstacle in building other AdX integrations

with third-party ad servers was a lack of interest by the third-party ad servers (which is again

consistent with Google not controlling unique, "must have" demand).[950] Google documents also

demonstrate other obstacles in building AdX integrations with third-party ad servers, including

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[947]   GOOG-DOJ-04427670 at -671 (stating that "Passing an impression to Adx is not in violation of our policy. Passing an impression from Adx to any other system that dynamically or programmatically allocates ad calls based on actual or estimated real-time pricing information is in violation of our policy." (emphasis in the original)). The same document indicates that the policy ▮▮▮▮▮▮▮▮▮▮▮▮▮ by Google account managers or its Policy team.

[948]   Calculated from GOOG-AT-MDL-DATA-000066537 to -482007, GOOG-AT-MDL-DATA-000508827 to -58886, and GOOG-AT-MDL-DATA-000561536 to -4882 (AdX RFP 243 data).

[949]   Plaintiffs' economic experts focus on the point that AdX Direct is less attractive to publishers than calling AdX from DFP (*Lee Report*, § VII.C.3.a; and *Abrantes-Metz Report*, ¶ 416). But the better internal interoperation of AdX and DFP is not a sufficient basis for finding a harm to competition.

[950]   GOOG-DOJ-06583662 at -663 ("3rd party ad servers (i.e., not pub owned) have shown a continued reluctance to do the integration coding required without rev share, so we haven't pursued this work"); and GOOG-DOJ-03610002 at -003 (stating that "North America does not appear to have demand").

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740.   *Second*, Google's acquisition of Admeld took place in the context of a general decline in

the use of yield management. At the time Google initiated the acquisition process in October

2010, my understanding is that real-time bidding (RTB) was not well-established in the

marketplace and publishers often sought means to optimize the sequencing of their waterfalls.[1126]

However, by 2012 (if not earlier), Google documents indicate that yield management was

"dying."[1127] Between the beginning of the transaction process in October 2010 and the close of

the transaction in December 2011, publishers continued to move away from traditional yield

management and sell more impressions through RTB. In fact, Admeld's RTB revenue surpassed

its traditional yield management revenue in September 2011.[1128]

741.   Even Admeld personnel recognized that RTB, and not yield management, was the future.

For example, Brian Adams, the former Admeld CTO, explained that Admeld's yield

management was declining 30 percent year over year.[1129] For similar reasons, PubMatic and

Rubicon transformed themselves into real-time bidding platforms, reflecting the shifting trends

in the marketplace.[1130] As a consequence of these trends, Admeld stopped developing its yield

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[1126]   See, e.g., IAB, "Real Time Bidding (RTB) Project: OpenRTB API Specification Version 2.5," December 2016, p. ii ("The RTB Project, formerly known as the OpenRTB Consortium, assembled in November 2010 to develop a new API specification for companies interested in an open protocol for the automated trading of digital media across a broader range of platforms, devices, and advertising solutions.").

[1127]   GOOG-DOJ-13281035 at -037.

[1128]   GOOG-DOJ-11753371 at -372 to -373.

[1129]   GOOG-DOJ-13281035 at -038.

[1130]   Adzerk, "Welcoming PubMatic To The AdOS Marketplace," April 15, 2012 ("PubMatic's platform combines real-time bidding (RTB), the most comprehensive brand protection tools, extensive audience insights and hands-on support to serve the world's leading publishers."); Adzerk, "Welcoming Rubicon Project To The AdOS Marketplace," April 10, 2012 ("The partnership between Rubicon and Adzerk gives all Adzerk customers access to use a Real Time Trading platform that enables publishers to connect with buyers and sell ad inventory in real