

# **Competition in ad tech: A response to Google**

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## I. Introduction

In May 2020, Google submitted an expert report co-authored by Daniel Bitton and Stephen Lewis to the ACCC in the context of the latter’s Ad Tech Inquiry (the “Google Report” or the “Report”).<sup>1</sup> The authors focus to a large extent (if not exclusively) on clearing up “misconceptions” about Google’s ad tech business, and in particular “*several mistaken propositions and theories advanced by two Google critics [...] which seem to have colored some of the regulatory interest in Google’s ad tech business.*”<sup>2</sup> As we are the two Google critics targeted in the Google Report, we have decided to provide a reply. We thank the ACCC for accepting our submission, although the original deadline for submitting observations on the Ad Tech Issues Paper has expired.

The authors, who refer to us as “G&K” throughout the Report, take issue with some of our concerns about Google’s practices in the ad tech sector, as laid down in several papers we have published over the last one and-a-half year.<sup>3</sup> The main purposes of our ad tech papers were to (i) describe in a manner that would be reasonably easy to understand for lawyers, economists and policy-makers the complex and opaque mechanisms and tools that are at play in online display advertising, including real-time bidding (“RTB”) auctions, and (ii) expose some of the conducts pursued by Google, the dominant provider of ad tech services, which we believe could breach competition rules. As we believe these conducts are serious – and potentially create significant harm to advertisers, publishers, ad tech rivals, and consumers – we encouraged competition authorities to investigate them. Ad tech has attracted significant regulatory interest from competition authorities across the world, including the ACCC, the US

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<sup>1</sup> Daniel S. Bitton and Stephen Lewis, Clearing Up Misconceptions About Google’s Ad Tech Business, 5 May 2020, available at <https://www.accc.gov.au/system/files/Google%20-%20Expert%20report%20from%20Daniel%20Bitton%20and%20Stephen%20Lewis%20%285%20May%202020%29.pdf>.

<sup>2</sup> Google Report, page 2.

<sup>3</sup> The two main articles we wrote challenged by the Google Report are: Damien Geradin & Dimitrios Katsifis, “An EU competition law analysis of online display advertising in the programmatic age”, 15 (2019) *European Competition Journal*, 55; Damien Geradin & Dimitrios Katsifis 16 (2020) “Trust me, I’m fair”: analysing Google’s latest practices in ad tech from the perspective of EU competition law, *European Competition Journal*, 11 (“Trust me, I’m fair”). For additional materials, see Damien Geradin and Dimitrios Katsifis, Google’s (forgotten) monopoly – Ad technology services on the open web, September 2019, *Concurrences*, Art. N° 90967; Damien Geradin and Dimitrios Katsifis, Online Platforms and Digital Advertising Market Study: Observations on CMA’s Interim Report (February 13, 2020), available at SSRN: <https://ssrn.com/abstract=3537864>; Damien Geradin and Dimitrios Katsifis, Taking a Dive Into Google’s Chrome Cookie Ban (February 19, 2020), available at SSRN: <https://ssrn.com/abstract=3541170>; Damien Geradin, Dimitrios Katsifis and Theano Karanikioti, GDPR Myopia: How a Well-Intended Regulation ended up Favoring Google in Ad Tech (May 11, 2020), TILEC Discussion Paper No. 2020-012, available at SSRN: <https://ssrn.com/abstract=3598130>.

Department of Justice and State Attorney Generals, the UK Competition and Markets Authority (“CMA”), the French Autorité de la concurrence and the German Bundeskartellamt.<sup>4</sup>

While the Google Report refers to our concerns as “theories”, as if they were detached from the facts, it is important to note that our papers are based on a detailed review of the materials available on Google’s web support manager, in which the company describes, usually in an obscure manner, the way in which its ad tech tools function, as well as on dozens of interviews with ad tech experts involved at various levels of the ad tech supply chain, and an analysis of the economic and technical literature on RTB auctions. Whichever way the authors of the Google Report try to portray our analysis, it is deeply rooted in the facts and in many instances confirmed by the Competition and Markets Authority’s Interim Report on its Online Platforms and Digital Advertising market study (the “CMA Interim Report”).

In this respect, reading the Google Report has been most fascinating, for it describes an alternative reality. The authors paint a world where the ad tech sector “*has experienced the hallmarks of a fiercely competitive marketplace*”, where Google has done nothing but to innovate and foster interoperability with its products, while at the same time carefully “*balanc[ing] the interests of all ecosystem participants*” to ensure the long-term viability of the ad-funded web. No one involved in the ad tech sector would of course agree with this description. To the contrary, as we have shown in our papers, advertisers, publishers and Google’s ad tech rivals have expressed criticisms for years about Google’s exclusionary and exploitative practices, although many of these actors are often too scared of Google to speak up as they are dependent on the demand flowing through some of its tools.

The Google Report is rather predictable, for the authors follow faithfully the rules of the “Google playbook”, Google’s well-known strategies to fudge the issues and confuse the (unfamiliar) reader. First, the authors cherry pick arguments, selectively addressing what it suits them most, while remaining silent on the thorniest ones. For instance, the authors do not

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<sup>4</sup> Brent Kendall and John D. McKinnon, “Justice Department, State Attorneys General Likely to Bring Antitrust Lawsuits Against Google”, *The Wall Street Journal*, 15 May 2020, available at <https://www.wsj.com/articles/justice-department-state-attorneys-general-likely-to-bring-antitrust-lawsuits-against-google-11589573622>; Competition and Markets Authority, Online platforms and digital advertising, Market study interim report, 18 December 2019, available at [https://assets.publishing.service.gov.uk/media/5ed0f75bd3bf7f4602e98330/Interim\\_report\\_---\\_web.pdf](https://assets.publishing.service.gov.uk/media/5ed0f75bd3bf7f4602e98330/Interim_report_---_web.pdf); Autorité de la concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, available at [http://www.autoritedelaconcurrence.fr/doc/avis18a03\\_en\\_.pdf](http://www.autoritedelaconcurrence.fr/doc/avis18a03_en_.pdf); Gaspard Sebag and Aoife White, “Why France’s Antitrust Cop Is Wary of Apple Pay and Deadly Deals”, *Bloomberg*, 29 August 2019, available at <https://www.bloomberg.com/news/articles/2019-08-29/why-france-s-antitrust-cop-is-wary-of-apple-pay-and-deadly-deals>; Bundeskartellamt, Press release: Bundeskartellamt launches sector inquiry into market conditions in online advertising sector, 1 February 2018, available at [https://www.bundeskartellamt.de/SharedDocs/Publication/EN/Pressemitteilungen/2018/01\\_02\\_2018\\_S\\_U\\_Online\\_Werbung.pdf?\\_blob=publicationFile&v=3](https://www.bundeskartellamt.de/SharedDocs/Publication/EN/Pressemitteilungen/2018/01_02_2018_S_U_Online_Werbung.pdf?_blob=publicationFile&v=3).

address many of our concerns relating to Open Bidding and pretend that throughout the years features such as Dynamic Allocation were pro-competitive. Second, in a true Google fashion, the authors try to give the illusion of a crowded and competitive marketplace by pointing to a number of companies that are supposed to constrain Google’s ad tech business. Unfortunately for them, these companies are either fringe competitors or they do not compete with Google in the first place. The motto of the “*competitive and crowded marketplace*” is not unlike Google’s all too familiar “*competition is just one click away*” mantra.<sup>5</sup> Third, staying loyal to Google’s tradition of publishing obscure blogposts and using evasive language when responding to questions from regulators, the authors make use of ambiguous and even misleading language. Examples include the discussion of Google’s “last look” advantage and Google Ads’ margin. Fourth, the authors attempt to depict Google as the great innovator, whilst in reality most of the innovation in ad tech is not attributable to Google, whose end-to-end control of the supply chain has been built primarily through acquisitions.

Now, we are grateful to Google for commissioning and making public this Report. It is indeed the first time that Google provides such details about several controversial features of its ad tech products. In a world where Google typically communicates important product changes to its customers through Delphic blog posts, which, as we show later, Google subsequently modifies as it sees fit and without notice to serve its arguments, this Report offers us a rare opportunity to test our analysis. As the authors of the Report represent and advise Google on various matters involving ad tech, including investigations by several competition authorities across the globe, this Report offers a glimpse into the stories Google tells regulators.

In fact, the Google Report has made us even more confident on the strength of our arguments, which – as we will demonstrate in this response – clearly show that Google’s conduct in the ad tech sector is problematic and should therefore be investigated. The Google Report does not contain a single valid criticism of our analysis. We are also astonished that, while the authors of the Google Report must have access to a large volume of data regarding Google’s ad tech business, they do not seek to rebut our analysis with any data point. The Report is essentially descriptive and, in most instances, seeks to challenge our analysis in a formal way, e.g., by extensively referring to Google’s own description of its products and tools.

Because the Google Report contains many ambiguities and several important omissions, which we cannot clarify in the absence of investigative powers, we provide in an Annex a list of

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<sup>5</sup> See e.g., Adam Kovacevich, “Google’s approach to competition”, *Google Public Policy Blog*, 8 May 2009, available at <https://publicpolicy.googleblog.com/2009/05/googles-approach-to-competition.html>, last accessed on 27 May 2020; Schmidt on Antitrust: Competition is One Click Away, *NBC Bay Area*, 21 September 2011, available at <https://www.nbcbayarea.com/news/national-international/schmidt-on-antitrust-competition-is-one-click-away/1901637/>; Google, “Facts about Google and Competition”, available at <https://web.archive.org/web/20121201151819/http://www.google.com/competition/qa.html> (capture from 1 December 2012).

questions that the ACCC and other authorities could ask Google to address in a precise and non-evasive manner. As we will show, the Google Report contains a number of contradictions between what the authors say and what Google stated in other circumstances, which suggests that either the authors are misguided or Google may have made misleading statements to regulators or at the very least was economical with the truth.

The Google Report is structured as follows. The authors first discuss in Section II ad tech concepts and terminology, arguing that our concerns have focused on a “*relatively small sales channel*.”<sup>6</sup> Section III examines Google’s business model, asserting that its role as a search engine and a vertically integrated ad tech provider gives it the incentive to ensure a vibrant ad-funded open web. In Section IV, the authors discuss the evolution of real-time bidding and Google Ad Manager since the acquisition of DoubleClick. Section V allegedly responds to “*each of [our] antitrust theories of harm*”, while Section VI concludes. The bulk of the authors’ criticism of our analysis is found in Section V, titled “Google’s ad tech products and practices have promoted not harmed competition”.<sup>7</sup>

The Google Report is deficient in multiple respects, which we explore in detail below. It includes misleading arguments, factual inaccuracies, and glaring omissions. Indeed, the Google Report should be read at two levels. The first level comprises what the authors actually say, which in many cases is factually erroneous. The second level comprises what the authors do *not* say. Having this in mind will help us expose some convenient omissions in the Google Report. An illustrative example can be found already in the Report’s introduction, where the authors state (in carefully selected language) with regard to the so-called “last look” advantage of Google’s ad exchange:

“We explain that this is actually not how Ad Manager was designed, nor how it works today, and how its design and changes to its design have promoted competition”.<sup>8</sup>

Note how the authors present the issue by selecting the two extreme timepoints – (a) the point when Google Ad Manager was designed and (b) today – omitting any reference to what happened in between, as if past conduct is of no interest to antitrust analysis and regulators. As we discuss later, the authors clearly admit the existence of the “last look” advantage in the past. The same type of selective analysis and argumentation is found throughout the Google Report.

Our reply is divided in five Parts. **Part II** provides an executive summary of our analysis of the Google Report. **Part III** offers some high-level remarks on the Google Report. **Part IV**

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<sup>6</sup> Google Report, page 3.

<sup>7</sup> Google Report, pages 23-51.

<sup>8</sup> Google Report, page 3.

addresses in detail the authors’ description of the evolution of RTB and Google Ad Manager, before responding in detail to their criticisms. **Part V** concludes. Finally, we include an **Annex** with several questions which regulators (including the ACCC) might consider addressing to Google in order to clear up various “misconceptions” around its ad tech business.

## **II. Executive summary**

In a first paper published in early 2019, we explained the mechanics of online display advertising and real-time bidding. After providing an overview of the various ad tech players, we identified Google as the leading, and most likely, dominant player across the ad tech value chain. We then analyzed several features introduced by Google over the years (Dynamic Allocation, Enhanced Dynamic Allocation and Exchange Bidding, now called Open Bidding), and showed that these features were manifestations of a constantly mutating leveraging practice of Google which at its core remains fundamentally the same: using its leading ad server DoubleClick for Publishers (now part of Google Ad Manager) to gain an unfair advantage in ad intermediation to the detriment of rival intermediaries, and ultimately publishers, advertisers and consumers. We also explained how lack of competition across the ad tech chain enables Google to exploit advertisers and publishers by charging hidden margins on top of its disclosed fees for ad intermediation. After we published our first paper, Google announced it would switch its Google Ad Manager to a single unified first-price auction (the “Unified Auction”) in an attempt to create “*a fair and transparent market for everyone*”. In a paper published in January 2020, we analyzed whether Google’s switch to a Unified Auction had addressed the concerns we expressed in our first paper, concluding it did not.

In this paper, we respond to the expert report co-authored by Daniel Bitton and Stephen Lewis, which Google submitted in May 2020 to the ACCC in the context of the latter’s Ad Tech Inquiry, in which the authors challenged the findings we made in our 2019 and 2020 papers (the “Google Report”). The Google Report is deficient in multiple respects; it includes misleading arguments, factual inaccuracies, and glaring omissions, thus making us even more confident on the strength of our arguments.

Hereafter, we summarize the main claims made in the Google Report as well as our rebuttal of such claims.

**Part III** dismisses some high-level remarks made by the authors of the Google Report.

- First, we explain why the authors’ description of our analysis as limited to a “*small slice of all online display ad sales*” and “*narrow ad tech issues*” is misleading. Our analysis has focused on online display advertising on the open web – a crucial source of revenue for tens of thousands of online publishers – which in 2018 stood at \$ 46

billion, while open intermediated auctions in the US alone accounted for more than \$ 10 billion in ad spend in 2019.

- Second, we refute the theory that, as a search engine, Google has an incentive to support a vibrant ad-funded web, and thus “*a competitive and open ad tech marketplace*” that supports publishers, noting that this claim is totally at odds with Google’s practices. We also rebut the claim that Google has an incentive to balance the interests of various stakeholders and ensure the long-term viability of the ecosystem. Google’s presence on both the buy-side and the sell-side of ad inventory transactions, while also running an ad exchange, creates the very type of conflict of interests that would not be allowed in financial markets.
- Third, we debunk the myth of ad tech being “*fiercely competitive*”. In their attempt to confuse the reader, the authors blur the lines between different ad tech products, different types of online advertising, as well as between ad tech vendors active in the open display market and self-serve tools provided by “walled gardens”. The authors then list a wide range of companies allegedly competing with Google, avoiding any reference to market shares, as if the number of players shows a competitive market. Worse, many of the companies the authors list are irrelevant, as they are specialized in certain segments (e.g., video, native advertising).
- Finally, we debunk the myth that Google fosters interoperability with its products, showing that in many instances it does just the contrary. For instance, the Report omits any reference to how Google Ads demand is overwhelmingly channeled through Google’s own ad exchange, as confirmed by the CMA. Another example is YouTube, whose inventory since 2016 may be bought programmatically exclusively through Google’s own buy-side tools.

In **Part IV**, we rebut in detail the various allegations of the authors. After summarizing our past research, we examine the authors’ description of the evolution of RTB and Google Ad Manager, which includes several important omissions, interesting admissions as well as misleading statements.

- First, we show that their description of Dynamic Allocation is plainly misleading, for it focuses on how it functioned at the early stages of programmatic advertising and before publishers started routing their inventory to ad exchanges. The Report includes no reference as to how Dynamic Allocation gave AdX a unique advantage over other ad exchanges, which were captive of their estimated price in the waterfall. Dynamic Allocation also allowed AdX to cherry-pick impressions and thus “cream skim”, to the detriment of rivals, and created allocative inefficiencies.



- Second, the authors' description of the emergence of header bidding includes egregious omissions and distorts reality. The authors would like us to believe that header bidding emerged as a result of industry-wide protocols, while in reality it emerged as a way to solve DFP's inefficiency of not allowing ad exchanges to compete against each other in real-time, and which Google had done nothing to address. We also show that Google's concerns over header bidding put forward in the Report (high engineering and setup costs; page latency; reporting discrepancies; data leakage; and advertiser self-competition) are either pretextual, exaggerated, or flatly wrong.

We then refute the authors' detailed criticisms of our papers, showing that none of them are valid.

- In the first place, we challenge the argument that Dynamic Allocation was a procompetitive innovation, noting how the CMA observed that Dynamic Allocation solved only part of the efficiency problem associated with the waterfall, and only for AdX. In fact, Dynamic Allocation gave AdX an advantage over all other exchanges which were stuck in the waterfall with their "estimated" demand. AdX was the only ad exchange able to insert its real-time demand and could cherry-pick impressions at will and at a lower price.

The authors' argument that Dynamic Allocation was launched by DoubleClick in 2007, so that "*any claims that Dynamic Allocation [...] was designed to hinder header bidding are chronologically backwards*", misrepresents our analysis. We never argued that Dynamic Allocation was *designed* to hinder header bidding. Quite the contrary, header bidding emerged precisely as a *response* to the inequity of Dynamic Allocation and to make up for DFP's inefficiency. It is the existence of Dynamic Allocation in combination with header bidding, which resulted in AdX having the "last look", whereby it would be called by DFP and given the opportunity to outbid the header bidding winning bid by a penny, as the CMA confirmed.

- In the second place, we examine the authors' argument that Open Bidding created an alternative to and solved drawbacks of header bidding. The authors overlook two important points, namely that (a) Google's refusal to participate in any header bidding solution not provided by itself protects DFP's dominance in the ad serving market, as it creates switching costs for customers; and that (b) Open Bidding comes with significant drawbacks, including (i) an inherent lack of transparency; (ii) conflicts of interests (Google organizes an auction in which it participates while collecting the bidding data of its rivals); and (iii) an additional 5-10% fee when a non-Google exchange wins the impression.

- In the third place, we explain why the Unified Auction has not created a “fair” and “transparent” market for everyone.

We first address the authors’ criticism of our skepticism over the removal of Google’s “last look” within the context of the Unified Auction. Our skepticism was partly based on the language used in a May 2019 blog post from a Google executive, which left open the possibility of Google having “last look” over header bidding. While Google has modified (without notice) the language of that blogpost, that is not the end of the matter. Google Ads may *still* have a distinct advantage over everyone else in the auction by taking advantage of the vast bidding data of its rivals that Google collects or at the very least by utilizing the “minimum bid to win” information.

We then discuss the “minimum bid to win” feature, which helps buyers refine their bidding strategy, but is not provided to buyers purchasing through header bidding, to the effect that buyers may steer their ad spend towards Google-controlled programmatic channels. The authors raise several irrelevant arguments, and implicitly admit that the “minimum bid to win” feature may attract more buyers to Google’s auction to the detriment of header bidding.

Next, we discuss the authors’ criticism of our argument that the new Bid Data Transfer file, which cannot be linked to other Ad Manager Data Transfer files, has created considerable inefficiencies in the way publishers monetize their inventory (because e.g., they can no longer measure the incremental value of their header bidding demand partners). The authors’ claim that publishers may still do A/B testing is irrelevant and erroneous, since the type of analysis made possible by linking Data Transfer files cannot be replaced by A/B testing, and in any event it is not for Google to decide which tool its customers should use. The authors also assert that removing the ability to link Data Transfer files was a measure to protect user privacy. We explain why this is another instance of Google using privacy as a pretext to justify controversial practices.

We then discuss the authors’ criticism of our argument that Unified Pricing Rules, which preclude publishers from setting buyer-specific floors, may result in publishers applying the lowest floor across all their demand partners (including Google Ads), in turn increasing the margin available to Google Ads. The authors challenge this finding on the basis of two arguments. First, they assert that buyer-specific floors can exacerbate the problem of advertiser self-competition, but these concerns are either pretextual or exaggerated. Second, they claim that buyer-specific floors can lead to allocative inefficiencies, but conveniently omit any reference to other instances of allocative inefficiencies, e.g., as a result of Dynamic Allocation.

- In the fourth place, we discuss Google Ads' hidden margin. In our papers, we showed that Google may extract a hidden margin by pocketing the difference between the price charged to the Google Ads advertiser and the price Google Ads pays when it secures an impression. Google's switch to a Unified Auction has done nothing to remove this ability to extract a margin. The authors respond with a number of weak arguments and end up making important admissions.

First, the authors criticize us for failing to have regard to the fact that that Google incurs a risk by making the CPC-to-CPM conversion. Remarkably, they do not try to challenge our model whereby Google earns a margin unrelated to that conversion, which may well amount to an *implicit admission* of our model. In addition, the authors *explicitly admit* that Google Ads charges a margin, but they do not explain how this happens. We are very skeptical as to the level of risk Google actually incurs when making the CPC-to-CPM conversion, given its vast troves of data and machine learning abilities. Importantly, the authors' admission that Google Ads charges a margin is hard to reconcile with Google's statement to the US House Judiciary Committee that "[a]dvertisers placing ads through Google Ads do not pay any fees".

Second, the authors rely on Google's Form 10-K for the fiscal year ended on 31 December 2018 to argue that Google keeps for itself less than 30% of what the advertiser is charged, the remaining 70% being handed over to the publisher as traffic acquisition cost ("TAC"). However, the 2018 Form 10-K does not break down between Google's various ad tech products, and the 70%-30% discussion does not tell the full story. Google reports TAC (the amount paid to publishers) *only* if it considers that it acts as a "principal". On the contrary, if Google considers that it acts as an "agent", then it does not report the amounts paid to publishers. While Google argues that it "*generally*" considers itself as a principal because it controls the advertising inventory before it is transferred to its customers, in its response to the US House Judiciary Committee, Google went to great lengths to portray itself as a mere "conduit" between publishers and advertisers, which does not engage in "*brokerage and trading activities*" and does not own the inventory transacted. If Google's response to the House Judiciary Committee is accurate and not misleading, then Google may well be an "agent" – at least insofar Google Ads is concerned – to the effect that the 30% excludes any fees charged by Google Ads.

Third, the authors argue that Google Ads charging a fee for its service is not related to Google's vertical integration. However, Google is able to extract a high margin precisely because of its vertical integration, as the available margin is maximized when two conditions are met: *first*, Google Ads is able to solicit a higher bid from its

advertisers compared to other DSPs; and *second*, Google Ads can secure impressions at a lower price. Google’s vertical integration is key to both, as it creates asymmetry of information among ad buyers, with Google Ads having superior information compared to other ad buyers, while publishers cannot counteract this asymmetry by setting buyer-specific floors.

Fourth, the authors make the irrelevant argument that there is nothing anti-competitive in Google charging both a buy-side and a sell-side margin. Google should disclose Google Ads’ margin and explain under which capacity it acts (“principal” or “agent”). At the very least, Google should ensure consistency between its various public statements to regulators and authorities (see e.g., Google’s response to the US House Judiciary Committee according to which Google Ads is free for advertisers).

Finally, **Part IV** provides some concluding remarks. We observe how the authors avoid responding to many of our concerns – and when they do respond, they put forward thin arguments that do not stand to critical analysis. Worse, the authors regularly misrepresent our arguments, such as when it comes to “last look” and the Unified Pricing Rules. As our concerns remain entirely valid, they should be investigated by the ACCC and other competition authorities.

### **III. High-level comments on the Google Report**

In this Part, we provide some high-level remarks, which broadly correspond to Sections II and III of the Google Report. We first discuss the alleged “narrow” character of our concerns (Section A) before addressing the issue of Google’s incentives in ad tech as a search engine and a vertically integrated ad tech provider (Section B). We then examine whether ad tech is, as the authors assert, “fiercely competitive” (Section C) and whether Google promotes interoperability (Section D).

#### **A. On the “narrow” character of our concerns**<sup>9</sup>

At the outset of the Report, the authors attempt to portray our analysis as being limited to a small market segment:

“G&K’s theories focus on a specific issue within ad tech: competition among ad tech intermediaries to run open ad auctions in which advertisers [...] can bid in real-time to buy online ad space from publishers. [...] Intermediated open auctions are one of several

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<sup>9</sup> As explained in the introduction, our papers are based on thorough research of publicly available information. We thus reject the word “theory” or “theories” used by the authors of the Google Report. Instead, we use the words “concern” or “analysis”.

ways that advertisers and publishers transact. It represents a relatively small slice of all online display ad sales (and an even smaller slice of all online ad sales).”<sup>10</sup>

The result, according to the authors, is that

“G&K’s antitrust theories about Google’s intermediated open auction products concern a relatively small sales channel in online advertising. In fact, as we understand it, Google typically does not act as an intermediary at all (much less as an open auction intermediary) for advertisements displayed on popular destinations like Amazon, Facebook, LinkedIn, Pinterest, Snapchat, Twitter, TikTok etc., where advertisers and agencies often spend much of their ad budget. Facebook alone reportedly accounts for about half of all display advertising revenues”.<sup>11</sup>

These statements call for several observations. In the first place, it is important to distinguish between the different segments of the online advertising market: (i) search advertising, (ii) display advertising on “walled gardens” (e.g., YouTube, Facebook, Instagram, Twitter, etc.); and (iii) display advertising on the open web, which supports thousands of online publishers, as for many of them online advertising is the main, if not the only source of revenues. To give a sense of the size of these different segments, we note in one of our papers that:

“Out of a total of \$237 billion of digital ad spend [in 2018], almost half of it (\$113 billion) was spent on search advertising, a market segment on which Google faces almost no competition. Out of the remaining \$124 billion advertisers spent on non-search (display) advertising, more than half (\$78 billion) was spent on so-called “walled gardens”, i.e. data-rich platforms such as Google, Facebook, Twitter and others, while only \$46 billion were spent on the open web, i.e. the tens of thousands of publishers, from leading news brands to small blogs. Moreover, a significant proportion of these \$46 billion was absorbed by commissions taken by ad tech companies, chief amongst which is Google.”<sup>12</sup>

Our papers have focused on the third online advertising segment, i.e. display advertising on the open web, which in 2018 stood at \$46 billion. While Google may consider this segment as “small”, it is the revenues it generates that allow thousands of publishers to produce the valuable content that populates the Internet.

In the second place, Google does not act as an intermediary for advertising taking place on the walled gardens of Facebook, Amazon, and the likes, because each walled garden has its own self-serve ad tech tools, which advertisers use in order to buy inventory. Advertisers typically

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<sup>10</sup> Google Report, page 5 (internal citation omitted).

<sup>11</sup> Google Report, page 6 (internal citation omitted).

<sup>12</sup> Damien Geradin and Dimitrios Katsifis, Google’s (forgotten) monopoly – Ad technology services on the open web, *supra* footnote 3, paragraph 3.

cannot use third-party ad tech tools to buy inventory from a walled garden. Yet our focus has always been on ad tech services in the open web, or as the CMA puts it, intermediation in the open display market.<sup>13</sup> And in this ecosystem it is Google, not Facebook nor Amazon, that is most likely to have market power; for instance, according to the CMA Google enjoys a market share in excess of 90% in the markets for publisher ad servers, where its position is also protected by high switching costs.<sup>14</sup>

In the third place, our analysis is not limited to so-called open auctions, as the authors would like to argue. Programmatic digital display ad spend may be broken down between (i) open auctions, (ii) private marketplaces (which may in turn be divided between private auctions and preferred deals) and (iii) programmatic direct.<sup>15</sup> Private auctions are RTB auctions, the main difference with open auctions being that they happen on an invitation-only basis.<sup>16</sup> In many cases private marketplaces are implemented through header bidding, which captures a central position in our papers. In other words, our concerns apply *both* to open auctions *and* private marketplaces. According to the very sources the authors cite in the Google Report, in the US alone open auctions and private marketplaces accounted for more than \$ 21 billion in ad spend in 2019 – and are projected to exceed \$ 24 and \$ 26 billion in ad spend in 2020 and 2021 respectively.<sup>17</sup> Even taking open auctions alone, we end up with more than \$ 10 billion in ad spend for 2019 – projected to reach more than \$ 12 billion in 2020 and almost \$ 14 billion in 2021 in the US.<sup>18</sup> On a global scale, the figures are certainly even higher.

We leave it to the reader to decide whether our analysis thus concerns “*narrow ad tech issues*”, but we cannot fail to observe that regulators have taken (and will rightly continue to take) interest in far smaller markets than those at stake in our papers. The authors’ arguments that our papers concern narrow ad tech issues are thus not only false, they are also irrelevant.

## B. On Google’s business model and incentives

Section III of the Google Report provides an overview of Google’s business model and how it is likely to affect Google’s incentives in ad tech. The authors of the Report advance two main

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<sup>13</sup> CMA Interim Report, paragraph 5.102.

<sup>14</sup> CMA Interim Report, paragraphs 5.205-5.206.

<sup>15</sup> CMA Interim Report, Appendix H, paragraph 33.

<sup>16</sup> See also CMA Interim Report, Appendix H, paragraph 34: “*PMPs are integrated within the real-time bidding (RTB) ecosystem and integrate campaign data alongside other RTB transactions...*”.

<sup>17</sup> Lauren Fischer, “Private Marketplace Ad Spending to Surpass Open Exchange in 2020”, *eMarketer*, 21 January 2020, available at <https://www.emarketer.com/content/private-marketplace-ad-spending-to-surpass-open-exchange-in-2020>.

<sup>18</sup> *Ibid.*

arguments relating to Google’s incentives as (a) a search engine and / or (b) a vertically integrated ad tech provider.

In the first place, the authors argue that, since Google drives the majority of its revenue from its search business, it should thus have an incentive to support the open ad-funded web:

“Google’s largest business is still by far Google Search [...] As such, Google should have a strong business interest in supporting a vibrant open, ad-supported internet. After all, people use Google Search to find useful information online that is responsive to their queries; Google’s search engine would be less useful if there were a dearth of free and original content on websites for which users can search.”<sup>19</sup>

The conclusion, according to the authors, is that Google has an incentive to ensure “[a] competitive and open ad tech marketplace”, which ultimately “helps web publishers fund the creation of free and original online content, which is good for the open Internet and thus search engines”.<sup>20</sup> To support their view, the authors list examples where Google has reportedly “foster[ed] interoperability and head-to-head competition with [its] ad tech products”.<sup>21</sup>

While superficially attractive, the argument that Google has the incentive as a search engine to support a vibrant ad-funded web holds no sway. As one of us has argued elsewhere, it is true that search engines like Google need publishers in the aggregate as they populate the web with content.<sup>22</sup> But that does not mean Google’s incentives are aligned with those of publishers and no antitrust concern may arise.<sup>23</sup> On the contrary, Google may well have the incentive to extract as much value from publishers as it can, up to a certain point. To draw an analogy, a monopolist’s interests are not aligned with those of its customers simply because, if it charges monopolistic prices beyond a certain point then it may end up losing customers.

In other words, it is one thing to say that Google as a search engine needs publishers in the aggregate; it is another thing to say that as a result Google’s incentives are aligned with those

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<sup>19</sup> Google Report, pages 10-11 (internal citation omitted).

<sup>20</sup> Google Report, page 11.

<sup>21</sup> Google Report, pages 11-12.

<sup>22</sup> Damien Geradin, *Complements and/or Substitutes? The Competitive Dynamics Between News Publishers and Digital Platforms and What It Means for Competition Policy* (February 20, 2019), TILEC Discussion Paper No. 2019-003, available at SSRN: <https://ssrn.com/abstract=3338941>.

<sup>23</sup> See also Fiona M. Scott Morton and David C. Dinielli, “Roadmap for a Digital Advertising Monopolization Case Against Google”, Omidyar Network, May 2020, available at <https://www.omidyar.com/sites/default/files/Roadmap%20for%20a%20Case%20Against%20Google.pdf>, page 28: “Google gains no advantage from eliminating all publishers; it needs some of them to create the premium content of, for example, the Wall Street Journal, to draw consumers to the web. Google does have an incentive, however, to weaken many parts of the publishing business (or, in some instances, to compete on the merits) so that it can capture a greater percentage of the total ad spend.”

of publishers. In this respect, we cannot help but notice there is a certain disconnect between the authors' theory about Google's incentives and the latter's position that it obtains minimal value from news publishers – a prominent type of online publishers – to the effect that it should not pay for the use of news content.<sup>24</sup>

In addition, the authors' theory about Google's incentives as a search engine does not fit well with recent steps Google has taken that appear to increase Google Ads' margin to the detriment of publisher revenue, as we discuss below in more detail.<sup>25</sup> In particular, Google is able to make a (hidden) margin by charging Google Ads advertisers a high price while at the same time paying publishers a lower price. The Unified Pricing Rules, a recent feature introduced as part of Google's switch to a single unified first-price auction, seem to enable Google Ads to secure publisher inventory at even lower prices, hence enlarging its margin.

Finally, as regards the (frequently raised) argument that Google has fostered interoperability and head-to-head competition with its ad tech products, we include a dedicated section below on Google's denial of interoperability to finally put this argument to rest.

In the second place, the authors claim that as a search engine and a vertically integrated ad tech provider, Google should have the incentive to balance the interests of various stakeholders and ensure the long-term viability of the ecosystem:

“[...] the combination of Google's search business and its vertical ad tech integration should give it incentives to balance the interests of all ecosystem participants (users, advertisers and publishers) and solve for externalities that threaten the long-term viability of the ecosystem.”<sup>26</sup>

On the other hand, our concerns are said to be

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<sup>24</sup> See e.g., Autorité de la concurrence, Decision no 20-MC-01 of 9 April 2020 concerning the requests for interim measures submitted by the Syndicat des éditeurs de la presse magazine, the Alliance de la presse d'information générale e.a. and the Agence France-Presse, available (in French) at [https://www.autoritedelaconcurrence.fr/sites/default/files/integral\\_texts/2020-04/20mc01.pdf](https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2020-04/20mc01.pdf), paragraph 206. Note that the Australian government also recently directed the ACCC to develop a mandatory code of conduct to govern the commercial relationship between digital platforms and media companies as progress on a voluntary code had been limited. See ACCC mandatory code of conduct to govern the commercial relationship between digital platforms and media companies, 20 April 2020, available at <https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/media-releases/accc-mandatory-code-conduct-govern-commercial>.

<sup>25</sup> See *infra* pages 79-80 (on the new Unified Pricing Rules) and pages 83-84 (on Google Ads' hidden margin).

<sup>26</sup> Google Report, page 12 (internal citation omitted).



“largely, if not exclusively, focused on the short-term interests of certain types of publishers. As a result, they [G&K] mistakenly characterize anything they perceive as adversely affecting publishers in the short-term as anticompetitive.”<sup>27</sup>

Throughout the Report we can find two recurring examples where Google’s conduct is said to involve such a balancing of interests with the aim of securing the long-term viability of the ecosystem and solving externalities that could result in a “tragedy of the commons”: (a) page latency,<sup>28</sup> and (b) advertiser self-competition.<sup>29</sup> As we will see below, these two examples are used to explain why, amongst others, Google chose not to participate in (client-side) header bidding and launched its own version of (server-side) header bidding.

The argument about Google having the incentive to balance the interests of various stakeholders in the ecosystem is fundamentally misplaced. First, as a preliminary point we cannot help but express our astonishment at the arrogance of this argument: the authors portray Google as the all-wise entity, which balances carefully the competing interests of the various stakeholders, namely publishers, advertisers and users (no mention of ad tech rivals), to prevent any “tragedy of the commons” and ensure the long-term viability of the ecosystem.

Second, we wonder whether it is possible – let alone efficient – for Google to balance the interests of competing stakeholders. Publishers wish to sell their inventory at the highest possible price, while advertisers want to buy inventory at the lowest possible price, so their interests are inherently in tension. At the same time, Google has the *exact opposite incentives on both sides*: Google Ads maximizes its margin when publishers get a low price while advertisers still pay a high price. This is difficult to reconcile with the concept of Google carefully balancing the interests of all players.

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<sup>27</sup> Google Report, page 13.

<sup>28</sup> The authors explain how Google, due to its holistic, long-term view of the ecosystem, is concerned about page latency, given the latter’s potential to prompt users to install ad blockers (Google Report, page 12). Individual publishers, on the other hand, may not be concerned about their impact on the whole ecosystem, and may even lead to a so-called “tragedy of the commons”, whereby more users turn to ad blockers, which ultimately harms advertisers and publishers (*Id.*). The result is that “*Google likely cares more about an issue like long page load times than any individual publisher does because of its impact on the ecosystem as a whole, on users, advertisers and publishers. One would expect it to affect Google to a much greater extent than individual publishers or advertisers, or individual ad tech providers that do not have a user-focused business or are focused on one side of the ad tech chain*” (*Id.*)

<sup>29</sup> See e.g., Google Report, pages 18-19: “*header bidding introduced an auction of auctions, which created potential inefficiencies by developing multiple paths to the same ad impression. In particular, auctions of auctions increase the risk that bid prices are inflated because advertisers may unknowingly compete against themselves for the same ad impression by participating in different exchanges competing in the same header bidding auction. [...] While such increased self-competition could in the short-term drive up the price for publishers, it could ultimately have an adverse impact on the overall ecosystem by hurting advertisers’ trust in ad auctions.*”

Google could of course respond that companies involved in two-sided markets, such as for instance Uber, need to optimize for the two sides of such markets or fail. But such a comparison would be misleading for at least two reasons. In the first place, it is not at all clear that the product markets concerned are two-sided. The ad server market for publishers is, for instance, one-sided and ad servers for publishers, such as DFP, are yield maximization tools whose function should be to serve the interests of publishers, not those of buyers or advertisers. When it sells its ad serving software to publishers, Google is a service provider, acting like a publisher's real estate agent. A real estate agent you hire for selling your house should aim to sell it at the maximum price, not to try at the same time to optimize for the buyer and help her buy at the lowest price. Suggesting that DFP has to take into consideration the interests of buyers, e.g., Google Ads, would be peculiar. Conversely, the DSP's function is to buy inventory for advertisers at the lowest possible price, not to balance the interests of the advertiser with those of the publisher.<sup>30</sup> To continue the analogy mentioned above, the DSP is like a real estate agent of the buyer, whose aim is to buy a house at the lowest price, not to try to optimize for the seller and help her sell at the highest price.

In the second place, even assuming that a specific market is two-sided (e.g., the market for ad exchanges), the concept of Google acting as a form of neutral referee that stands sober above the petty fights of various myopic stakeholders in order to ensure the long-term viability of the ecosystem is hardly credible. The reason is that, unlike Uber, Google is not only the platform where different third-parties transact; at the same time it is one of the transacting parties (e.g., in the form of Google Ads and DV360). Suggesting that Google, in its capacity as an ad exchange, balances the interests of sellers with those of buyers – including its *own* interests as an ad buyer – amounts to an admission of a conflict of interests on Google's behalf.

Third, suffice it to say that Google is not a charity. It maximizes its own commercial interests, and it only considers the interests of the various stakeholders (or creates the appearance that it does so) to the degree it deems necessary to maximize its own interests. Importantly, Google's interests as a search engine and an ad tech provider are not necessarily aligned with those of other stakeholders. As will be seen below Google has adopted strategies to collect hidden margins to the detriment of publishers and advertisers. Moreover, there is academic literature showing how a search engine's incentives may actually diverge from those of advertisers and consumers.<sup>31</sup>

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<sup>30</sup> Note that the authors of the Google Report acknowledge the existence of dedicated tools to support publishers and advertisers when discussing “buy-side” and “sell-side” tools in Section II.

<sup>31</sup> See e.g., Susan Athey and Glenn Ellison, (2011) Position Auctions with Consumer Search, *The Quarterly Journal of Economics*, Oxford University Press, vol. 126(3), pages 1213-1270, explaining how a search engine's interests are misaligned with those of advertisers and consumers. In addition, Alexandre de Corniere and Greg Taylor have shown how a search engine can have the incentive to steer traffic away from web content in a manner which harms consumer welfare. See Alexandre de Corniere and Greg Taylor, (2013) Integration and Search Engine Bias, available at SSRN:

Relatedly, it is important to consider that, besides being an ad tech vendor helping publishers sell their inventory, Google also sells its *own* inventory. This creates another conflict of interests. When Google’s buy-side tools route ad spend to third-party inventory, Google keeps a margin of the ad spend (the magnitude of which in many cases is unknown), but when ad spend is routed to its owned and operated inventory (e.g., Search, YouTube), Google keeps 100 cents to the dollar. The result is that Google may have the incentive to allocate the budget of advertisers using its buy-side products to its owned and operated properties – *even if* the advertiser would be better off by reaching the same user on a non-Google property.<sup>32</sup> It may thus be of little surprise that over the years the proportion of Google’s advertising revenue going to its owned and operated properties has increased – from 64% in 2007 to 82% in 2018 – at the expense of the percentage of advertising revenue going to third-party properties.<sup>33</sup> Google may even use data extracted from third-party publisher properties to usurp the publisher’s audience and then offer advertisers the ability to target it on its own properties (a practice referred to as “audience arbitrage”).<sup>34</sup>

Fourth, we wonder who has entrusted Google with this regulatory function of balancing the various interests and shaping the web. The answer is no one else than Google itself. A self-appointed private regulator of the web: because it knows better than we do, it should decide *for* us and *instead* of us. A single company, accountable to no democratic institution, liable only to its investors, proclaims itself as the great equalizer of the web. And all of that in a paper responding to antitrust criticism. Imagine an unregulated stock exchange owned by a private

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<https://ssrn.com/abstract=2190953>. Already in 1998 Sergey Brin and Lawrence (Larry) Page, founders of Google, noticed the conflicts of interests inherent to an ad-funded search engine. See Sergey Brin and Lawrence Page, (1998) The Anatomy of a Large-Scale Hypertextual Web Search Engine, In: Seventh International World-Wide Web Conference (WWW 1998), April 14-18, 1998, Brisbane, Australia.

<sup>32</sup> See also Dina Srinivasan, Why Google Dominates Advertising Markets (December 9, 2019), 23 STAN. TECH. L. REV. \_\_\_\_ (2020, Forthcoming), available at SSRN: <https://ssrn.com/abstract=3500919>, page 37 (noting how, when the author opened a small-business Google Ads account, she was required to “start a campaign on Google Search (with credit card) in order to merely complete the Google Ads account set-up process. In other words, Google Ads does not merely steer small advertisers to Google Search ad space, it sometimes requires them to start and fund an advertising campaign on Google’s own Search property in order to even be able to bid on ad space belonging to publishers such as The Seattle Times and The Register.”).

<sup>33</sup> *Id.*, page 38 (citing Google’s annual filings).

<sup>34</sup> On how Google may do so using its role as the leading ad server (and how this is contrary to what Google had submitted to the US Senate at the time of the DoubleClick acquisition) see *infra* footnotes 230 and 231. Google might also obtain such data using Chrome. See Damien Geradin and Dimitrios Katsifis, Taking a Dive Into Google’s Chrome Cookie Ban, *supra* footnote 3, page 10 (noting how “when a user signs in any Google web service (e.g., Gmail), it is automatically signed in to Chrome. If the user enables sync with its Google account, then its browsing history is saved in its Google account on Google’s servers and may be used to personalize experience on other Google products.”) In that case Google may circumvent the negotiation of rights over such data with publishers. See Dina Srinivasan, *supra* footnote 32, pages 58-59.

company which at the same time represents both the sell-side and the buy-side, arguing that it carefully balances the various interests to ensure long-term viability. How credible is that?

This is precisely why Google's conduct warrants regulatory scrutiny. As we noted elsewhere, already in 2009 Google described its ad exchange as a stock exchange for online advertising.<sup>35</sup> But the difference with stock exchanges is that Google's ad exchange operates with no regulatory constraints. Drawing inspiration from financial markets may help regulators address the issues this poses. As equity research firm Arete Research observed recently:

“Google itself said in 2009: “the ad exchange is like a stock exchange.” Our work in the regulatory debate has fleshed out analogies between the digital ad markets and financial markets, with the latter far more transparent. This began with our first work on ad tech (see *Ad Tech: Brash Boys*, July '14). Whatever estimates are made of the “ad tech tax” (ranging from 40-70%), it is orders of magnitude more than sub-1% total trading costs in more transparent financial markets, with far less scope for arbitrage, “hidden fees” or fraud.”<sup>36</sup>

Relatedly, Dina Srinivasan has observed how online advertising reflects the structure of an electronic trading market.<sup>37</sup> In the case of electronically traded equities markets, lawmakers have sought to protect competition through the application of certain broad principles, such as prohibiting intermediaries from using certain information advantages when trading, prohibiting intermediaries from preferentially routing order flow and requiring exchanges to provide traders with fair access to information and speed.<sup>38</sup> Similar principles could inform any regulatory intervention in the realm of online advertising.

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<sup>35</sup> Damien Geradin and Dimitrios Katsifis, *Trust me, I'm fair*, *supra* footnote 3, pages 50-51, citing the following quote from Neal Mohan, then Vice-President of Product Management at Google: “*The ad exchange is like a stock exchange. So, just like on a stock exchange, large institutional investors can participate directly—meaning large publishers, newspapers, magazines, entertainment portals, etc.—people with premium inventory. Similarly ad networks that are sophisticated in terms of their optimization and buying capabilities, those folks can participate directly as institutional investors on the stock exchange. While, also on a stock exchange, individual investors participate through things like brokerage houses which add another layer of value and so we see our AdSense and AdWords publishers and advertisers, respectively, participating [on the exchange] through AdSense and AdWords. We think the platform and the way that we've designed it is suit-able for all of these constituents.*”

<sup>36</sup> Arete Research, “Regulating Big Tech: Nothing Doing”, 22 January 2020, available at [https://assets.publishing.service.gov.uk/media/5e8c5fb1d3bf7f1f9e7c8eb/200217-Arete\\_Research\\_Response\\_to\\_Interim\\_Report.pdf](https://assets.publishing.service.gov.uk/media/5e8c5fb1d3bf7f1f9e7c8eb/200217-Arete_Research_Response_to_Interim_Report.pdf), page 6. See also Fiona M. Scott Morton and David C. Dinielli, *supra* footnote 23, page 19: “*It is unusual, to say the least, for a single company to represent both seller and buyers in the same market, and also to set the rules for, and conduct, the auctions that determine the winners, losers and prices in that market.*”

<sup>37</sup> Dina Srinivasan, *supra* footnote 32, pages 16-19.

<sup>38</sup> *Ibid.*

Fifth, contrary to what Google says, our concerns are not focused largely, let alone exclusively, “on the short-term interests of certain types of publishers”,<sup>39</sup> to the effect that we adopt a myopic view of Google’s practices. Our papers have always focused on the state of competition in ad tech, which is of crucial interest for publishers, advertisers, ad tech vendors and ultimately consumers.<sup>40</sup> The importance of having a competitive ad tech marketplace is acknowledged by the authors after all:

“A competitive and open ad tech marketplace helps publishers optimize yield from ad sales. It also helps advertisers increase their returns from online advertising and thus promotes growth in online ad spend, which in turn helps web publishers grow their ad sales. All of that helps web publishers fund the creation of free and original online content...”<sup>41</sup>

This is precisely why we have taken issue with practices that seem to have restricted competition in ad tech. As noted in the Report of the Digital Competition Expert Panel (the “Furman Report”),

“A lack of effective competition in the digital advertising market may lead to harm for consumers and businesses, for example through higher prices for advertisers, higher prices for consumers for goods and services that use digital advertising if these costs are passed through and/or a lower quality advertising experience for example seeing more (or more intrusive) adverts.”<sup>42</sup>

Any argument that we focus on the short-term interests of publishers is thus based on an erroneous reading of our papers.

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<sup>39</sup> Google Report, page 13.

<sup>40</sup> See e.g., Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, *supra* footnote 3, page 57: “*Because of its vital importance to advertisers and publishers, healthy competition in the advertising ecosystem is desirable*”; Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, page 51: “*A reduction in competition among ad exchanges and among ad servers would lead to higher prices for advertisers and consumers (if advertisers pass on such higher prices), as well as loss of innovation. In addition, surplus that would have accrued to publishers is instead captured by Google, reducing publishers’ incentives to innovate and invest in content generation. Producing lower-quality content may have significant negative spill-over effects for society at large. That is particularly the case for news publishers, whose online advertising revenue have been unable to offset the dramatic drop in their print revenue. There is evidence that a reduction of high-quality journalism results in a loss of civic engagement and ultimately undermines democracy, especially at the local level.*”

<sup>41</sup> Google Report, page 11.

<sup>42</sup> Unlocking digital competition, Report of the Digital Competition Expert Panel, March 2019, available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/785547/unlocking\\_digital\\_competition\\_furman\\_review\\_web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785547/unlocking_digital_competition_furman_review_web.pdf), paragraph 3.193.

Finally, even the specific examples (page latency; advertiser self-competition) where Google is said to carefully balance the interests of the various stakeholders are simply misleading, as we show later when discussing the “drawbacks” of header bidding. In particular, there is no reason why Google should be the arbiter of the optimal page load; after all, publishers have the same incentive to avoid page latency. The analogy to the “tragedy of the commons” and its detrimental long-term effects is misplaced as a publisher’s web page that loads too slowly is a page that is not seen, hence immediately harming the interest of the publisher in question. As regards the risk that advertisers end up competing against themselves, we note later that, *even if* it is a real problem in practice, Google seems to have exacerbated it, while it could have easily addressed it by agreeing on a common transaction/impression ID.

### C. On ad tech being “fiercely competitive”

The authors go to great lengths to create the illusion that ad tech is a “*highly competitive and dynamic marketplace*”,<sup>43</sup> building on the narrative put forward first in a September 2019 Google blog post by Sissie Hsiao with the title “*The ad tech industry is crowded and competitive*”.<sup>44</sup> To create this illusion, the authors resort to several tricks, which we explain below to dispel any confusion.

In the first place, the authors try to blur the lines between different ad tech products. Most notably, the authors argue that publisher ad servers and ad exchanges are no longer distinct products,<sup>45</sup> most likely in order to pre-empt any theory of harm based on Google having a dominant position in the highly concentrated market for publisher ad servers. Yet this is hardly credible. When examining DoubleClick’s acquisition by Google, the European Commission held that ad serving and ad intermediation are distinct product markets.<sup>46</sup> This view was upheld

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<sup>43</sup> Google Report, page 35.

<sup>44</sup> Sissie Hsiao, “The ad tech industry is crowded and competitive”, 11 September 2019, available at <https://www.blog.google/technology/ads/ad-tech-industry-crowded-and-competitive/>. This surreal narrative was also put forward in an earlier CPI article co-authored by one of the Google Report authors. See Daniel Bitton, Maurits Dolmans, Henry Mostyn and David Pearl, “Competition in display ad technology: a retrospective look at Google/DoubleClick and Google/AdMob”, *Competition Policy International Antitrust Chronicle* (April 2019).

<sup>45</sup> Google Report, page 8: “*While these sell-side tools were first developed as distinct products more than ten years ago, in today’s world, the differences between them are diminishing. The terms ad exchange and SSP, for example, are often used interchangeably in the industry, and we will do the same in this paper. Even the distinction between publisher-side ad servers and SSPs has been blurring in recent years, with it becoming common in the industry to offer ad serving and SSP functionalities on a single platform*”. See also page 46: “*calculating separate shares for publisher-side ad servers may not be meaningful because that excludes ad networks, SSPs and header bidding auctions, while publishers can and do use those as partial or complete substitutes for ad servers*”.

<sup>46</sup> Commission Decision in Case COMP/M.4731, Google/DoubleClick, paragraphs 74-81.

by the Autorité de la concurrence in its 2018 opinion on online advertising.<sup>47</sup> The same approach has been followed by the CMA, which calculated market shares separately for publisher ad serving.<sup>48</sup> The reason why ad exchanges cannot be a substitute for ad servers has been well captured by the CMA: unlike ad exchanges, the ad server is a holistic yield management tool, which publishers use to manage both their direct and indirect sales:

“The publisher ad server plays a central role in the digital intermediation ecosystem, as it is responsible for the decision logic that determines the choice of which advert will appear at each specific piece of inventory. This does not simply involve selecting the highest bid but requires a holistic management of real-time demand and the direct deals agreed by the publisher with advertisers and media agencies”.<sup>49</sup>

We doubt whether publishers would switch to an ad exchange if their ad server were to raise its fee by 5%-10%. Needless to say, the fact that Google decided to integrate its ad exchange and its ad server into Google Ad Manager in no way means there is no longer a separate market for ad serving.<sup>50</sup>

In the second place, the authors try to create the impression that there is “*significant inter-format competition in online (and offline) advertising*”,<sup>51</sup> to the effect that market shares should not be confined to particular formats. Once more, there is little support for this statement. Online advertising has long been held to constitute a separate market from offline advertising.<sup>52</sup> Within online advertising, the CMA noted that advertisers do not view display and search ads as substitutable, considering the different purposes they serve.<sup>53</sup> The same view has been

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<sup>47</sup> In particular, the Autorité noted that there is “*some convergence between ad servers and technical intermediation services (DSPs, SSPs, ad exchanges etc.)*”, but observed that “*a similar observation was made in 2008 [in Google/DoubleClick] by the Commission*”, concluding that “[*n*]o information emerged from the consultation [...] would call into question the conclusions of the Commission’s analysis”. See Autorité de la Concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, *supra* footnote 4, paragraph 185.

<sup>48</sup> CMA Interim Report, paragraph 5.181.

<sup>49</sup> CMA Interim Report, Appendix H, paragraph 82.

<sup>50</sup> See also Fiona M. Scott Morton and David C. Dinielli, *supra* footnote 23, page 11: “[*n*]or is this conclusion [that the various products in the ad tech supply chain are not substitutes for each other] undermined by the fact that some of Google’s affiliates now perform more than one function in the ad tech stack.”

<sup>51</sup> Google Report, page 46 (internal citation omitted).

<sup>52</sup> See e.g., Commission Decision of 11 March 2008 in Case COMP/M.4731 Google/DoubleClick, paragraphs 45, 46 and 51; Commission Decision of 18 February 2010 in Case COMP/M.5727 Microsoft/Yahoo! Search Business, paragraph 61.

<sup>53</sup> CMA Interim Report, paragraphs 5.28-5.31.

expressed by the Federal Trade Commission,<sup>54</sup> and the Autorité de la concurrence.<sup>55</sup> In the case of display advertising, the CMA considered that an additional segmentation between video and non-video inventory may be appropriate, given the limited substitutability between these two formats.<sup>56</sup>

In the third place, the authors try to blur the lines between ad tech providers active in the open display market and self-serve tools provided by “walled gardens” such as self-serve tools offered by Snapchat and LinkedIn, which only allow advertisers to purchase their own and operated inventory. The authors even argue that

“[t]he CMA’s study appears to recognize that for advertisers, such platforms are substitutes for independent buying platforms or ad networks that offer access to ad inventory of unaffiliated publishers. This suggests that attempts to define a separate market around (ad tech for) “open display” vs. “owned & operated” ad inventory may not be appropriate”.<sup>57</sup>

Yet the CMA never said that platforms offering advertisers the ability to purchase their owned and operated inventory through self-serve tools (e.g., Snapchat) compete with *ad tech vendors* (e.g., an ad exchange such as that offered by Rubicon Project). Instead, what the CMA stated was that such platforms most likely compete with *publishers* in the open web for the sale of display inventory.<sup>58</sup>

In the fourth place, the authors assert that publishers and advertisers regularly in-source instead of using third-party solutions.<sup>59</sup> In particular, the authors state that major advertisers have moved portions of their marketing in-house. This is plainly irrelevant; the sources the authors

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<sup>54</sup> Statement of Federal Trade Commission concerning Google/DoubleClick, FTC File No. 071-0170, page 3.

<sup>55</sup> In its 2010 opinion focusing on search advertising, the Autorité adopted a clear distinction between search and display advertising. See Autorité de la concurrence, Opinion no 10-A-29 of 14 December 2010, page 28. The same view was expressed in its 2018 opinion. See Autorité de la Concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, *supra* footnote 4, paragraph 179.

<sup>56</sup> CMA Interim Report, paragraphs 5.34, 5.36 and 5.111.

<sup>57</sup> Google Report, pages 46-47 (internal citation omitted).

<sup>58</sup> CMA Interim Report, paragraph 5.35: “...advertisers would largely see owned and operated and open display advertising as substitutable in spite of these differences” and paragraph 5.106: “[m]edia agencies and advertisers have told us that advertisers are generally agnostic in their choice across different platforms that sell display advertising and between using owned and operated platforms and the open display market”.

<sup>59</sup> Google Report, pages 44-45.



rely upon refer to advertisers partially in-sourcing work traditionally out-sourced to *ad agencies*, not to ad tech vendors.<sup>60</sup>

In addition, the authors allege that in-sourcing ad serving is regular among publishers, and mention platforms such as Amazon, Facebook and LinkedIn as examples. The authors also refer to the European Commission’s decision in *Google/DoubleClick* as apparently recognizing that in-house ad serving solutions exercise competitive constraints on ad tech vendors. As a preliminary remark, we note that the European Commission likely did not reach a definitive view on this issue, as it calculated market shares excluding in-house ad serving. In any event, we would be extremely surprised if in-house ad serving is substantial. The walled garden examples the authors use are misleading and erroneous: the question is not whether LinkedIn has its own in-house ad server (it probably never procured such ad serving services from an external provider). To draw an analogy, assume there is a market for e-commerce inventory management software. The fact that e.g., Amazon has developed its own software solution to manage its e-commerce inventory does not mean that there is no market for e-commerce inventory management software. As regards publisher ad serving in particular, the relevant question is whether DFP’s customers could respond to e.g., a slight increase in DFP’s ad serving fees by turning to an in-house solution. From our understanding, no publisher would be willing to invest the engineering resources required to develop their own ad server. That would also result in considerable inefficiencies, considering that without DFP publishers cannot efficiently monetize AdX demand, as discussed in the next section.

Against this background, we now turn to examine critically the authors’ description of the “crowded” and “competitive” ad tech space. The authors’ strategy is rather simple: (a) they argue that ad tech fees are falling; (b) they list a number of companies that apparently compete with Google; and (c) they assert that ad tech is a “dynamic” marketplace, mainly relying on past mergers and acquisition activity.

First, the authors claim that ad tech fees are declining over the years while programmatic ad spend is growing.<sup>61</sup> To this end they cite *eMarketer* reports and articles according to which ad tech vendors have lowered their take rates as a result of competition.<sup>62</sup> Yet the authors’ argument is misleading in the first place; even assuming that ad tech fees have fallen over the

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<sup>60</sup> See e.g., Interactive Advertising Bureau, *Programmatic In-Housing: Benefits, Challenges and Key Steps to Building Internal Capabilities*, May 2018, available at [https://www.iab.com/wp-content/uploads/2018/05/IAB\\_Programmatic-In-Housing-Whitepaper\\_v7a.pdf](https://www.iab.com/wp-content/uploads/2018/05/IAB_Programmatic-In-Housing-Whitepaper_v7a.pdf), page 3: “A study conducted by the Association of National Advertisers (ANA) indicated that in-housing has recently trended upward, as 35% of brands surveyed had reduced the role of external agencies in 2017, more than doubling the 14% rate reported in 2016.” (emphasis added).

<sup>61</sup> Google Report, page 36.

<sup>62</sup> Google Report, pages 36-37.

years, that is no indication of a healthy and competitive marketplace, for the simple reason we do not know the counterfactual (i.e. how the market would have evolved but for Google’s practices). By the same token, one should be happy with a monopolist car manufacturer that over the years increases the quality of the cars produced.

Moreover, we are quite skeptical as to whether ad tech fees have indeed fallen, as the authors assert. According to a recent study published by the Incorporated Society of British Advertisers (ISBA), the first end-to-end study documenting the ad tech fees, publishers receive on average 51% of the ad spend, with ad tech vendors and agencies capturing 49% of ad spend.<sup>63</sup> Quite astonishingly, the authors of the ISBA study were unable to attribute 15% of ad spend – one third of the supply chain costs – and had to use the term “unknown delta”(!)<sup>64</sup> If that is the fiercely competitive marketplace the authors of the Google Report have in mind, then we dare not ask what fees would be charged in a non-competitive marketplace.

Furthermore, it would be interesting to have information on how Google’s *own* take rate and fees have evolved throughout the years, but the authors provide no such data. Yet such information would provide a better indication as to the extent of competitive pressure Google faces. For instance, we have heard that while most exchanges have reduced their fees and charge around 8-12% of publisher revenue, AdX continues to charge 20% of publisher revenue.

Second, the authors list a number of companies they regard as competing with Google’s ad tech products. Rather conveniently, they avoid making even the slightest reference to market shares, as if the number of competitors means that Google is subject to meaningful competitive constraints. Indeed, the authors’ tactic does not differ much from the all too familiar argument that “*competition is just one click away*” which Google has used to argue it is not dominant in general search,<sup>65</sup> despite the existence of market shares as high as 90% and substantial barriers to entry.<sup>66</sup>

Worse, many of the companies the authors list are irrelevant, as they are specialized in certain segments (e.g., video, native advertising). For instance, when discussing ad servers in page 9 of the Google Report, the authors refer to companies such as ironSource and MoPub, which are focused entirely on app inventory, and players such as FreeWheel and SpotX, which are focused on video/TV inventory. Suggesting that these players exert a competitive constraint

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<sup>63</sup> See ISBA Programmatic Supply Chain Transparency Study, Executive Summary, available at <https://www.isba.org.uk/media/2424/executive-summary-programmatic-supply-chain-transparency-study.pdf>, (last accessed on 21 May 2020), page 8.

<sup>64</sup> *Ibid.*

<sup>65</sup> See *supra* footnote 5.

<sup>66</sup> See e.g., Commission Decision of 27 June 2017 in Case AT.39740 – Google Search (Shopping), paragraphs 272 et seq.

on DFP is far-fetched, to say the least. Indeed, the only alternative ad servers that the CMA mentioned are Smart and Xandr.<sup>67</sup> However, the CMA noted that these players have “*a minimal presence in the UK as ad server providers*”,<sup>68</sup> and we doubt the conclusion will be different in other jurisdictions. The number of publisher ad servers has decreased with OpenX, Verizon Media and Open Ad Stream exiting the market.<sup>69</sup> Overall the CMA held that the market for publisher ad servers is highly concentrated, with Google Ad Manager accounting for more than 90%.<sup>70</sup> It should be added that, as the CMA confirmed, publishers primarily single-home when it comes to ad serving technology,<sup>71</sup> so the authors’ reference to multi-homing in pages 43-44 of the Report is irrelevant, at least when it comes to publisher ad serving.

However, Google proved once more that it lives in a parallel universe when it submitted to the CMA that some of its “*main competitors*” in publisher ad serving included “*AdGear, Adition, Polar and YoSpace*”.<sup>72</sup> Two of these companies (Polar and YoSpace) are not even publisher ad servers according to their own websites,<sup>73</sup> while AdGear focuses on TV advertising.<sup>74</sup> As regards Adition, we were not even aware of its existence. That is not serious.

Other comical examples of companies that are supposed to compete with Google and are referred to in the Google Report include AppLovin, Fyber, ironSource, Vungle AdColony, Chartboost, InMobi and Unity (all specialized in app advertising, primarily reward ads for gaming apps; note also that AppLovin is shifting to a game content platform<sup>75</sup>), Taboola and Outbrain (which are content recommendation platforms; now merging), and Teads (specialized in outstream video advertising).

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<sup>67</sup> CMA Interim Report, Appendix H, paragraph 191.

<sup>68</sup> *Ibid.*

<sup>69</sup> *Id.*, paragraph 192.

<sup>70</sup> *Id.*, paragraph 191.

<sup>71</sup> *Id.*, paragraph 197.

<sup>72</sup> Google, Online Platforms and Digital Advertising Comments on the Market Study Interim Report, 8 April 2020, available at [https://assets.publishing.service.gov.uk/media/5e8c8290d3bf7f1fb7b91c2c/200212\\_Google\\_response\\_to\\_interim\\_report.pdf](https://assets.publishing.service.gov.uk/media/5e8c8290d3bf7f1fb7b91c2c/200212_Google_response_to_interim_report.pdf), paragraph 29.

<sup>73</sup> YoSpace explains that “[o]ur technology operates as middleware between your existing ad serving infrastructure so you can enjoy the same campaign management and ad performance tracking you are already used to”. See <https://www.yospace.com/home-page/product-features/>. Polar is a so-called Format Management Platform that is used by “publishers, agencies and brands to create, execute and optimize a variety of digital advertising products including native, social, video and stories formats.” See <https://polar.me/>.

<sup>74</sup> <https://adgear.com/en/>.

<sup>75</sup> Allison Schiff, “AppLovin’s Game Plan: Go Big On Content And Distribution”, *AdExchanger*, 21 May 2020, available at <https://www.adexchanger.com/mobile/applovins-game-plan-go-big-on-content-and-distribution/>.

As to companies like Amazon, AT&T, Comcast, Facebook and Verizon, they may be strong in other markets, but, contrary to what the authors would like to suggest, they pose no significant competitive constraint on Google when it comes to ad tech. As observed above, Comcast's FreeWheel is specialized in video. Despite the hype, Verizon Media failed to meet expectations and resulted in a massive write-down of its valuation. Facebook has limited its presence in the ad tech supply chain throughout the years. It is somewhat ironic that the authors keep referring to Facebook at the very moment Facebook itself, in its separate submission to the ACCC, stresses it plays a limited role in the ad tech stack and is not vertically integrated in the ad tech ecosystem.<sup>76</sup> The only ad tech solution Facebook offers in the open display segment is Facebook Audience Network (FAN), which as of 11 April 2020 is focused exclusively on app inventory – and commentators think it may even shut down completely.<sup>77</sup> AT&T acquired AppNexus and integrated it into its ad tech unit, Xandr. Xandr is expected to gradually become captive to AT&T's own video and TV inventory. Unsurprisingly, in April 2020 it was announced that Xandr would be absorbed by WarnerMedia.<sup>78</sup> As regards Amazon, while it has seen its advertising business grow considerably,<sup>79</sup> it is highly likely that the majority of such growth concerns Amazon's owned and operated inventory, i.e. Amazon's walled garden, instead of Amazon's ad tech tools to buy or sell display inventory in the open web. That is in line with the CMA's initial findings that Google has significant market shares at the DSP and SSP levels, namely 50%-70% of the value of ads purchased through DSPs and 40%-60% of the value of ads sold through SSPs.<sup>80</sup>

Third, the authors assert that a brief review of the market's evolution since Google's acquisition of DoubleClick shows how the ad tech space is characterized by "*dynamic competition*". The authors go as far as to assert that "*it is worth considering whether any company could*

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<sup>76</sup> Facebook, ACCC Advertising Services Inquiry Response to the ACCC's Issues Paper, 28 April 2020, available at <https://www.accc.gov.au/system/files/Facebook%20%2828%20April%202020%29.pdf>, page 4.

<sup>77</sup> Allison Schiff, "Facebook Is Killing Off Its Web Supply In Audience Network – And Don't Be Surprised If It All Shuts Down", *AdExchanger*, 5 February 2020, available at <https://www.adexchanger.com/platforms/facebook-is-killing-off-its-web-supply-in-audience-network-and-dont-be-surprised-if-it-all-shuts-down/>.

<sup>78</sup> Alison Weissbrot, "AT&T Folds Xandr Into WarnerMedia", *AdExchanger*, 30 April 2020, available at <https://www.adexchanger.com/tv-2/att-folds-xandr-into-warnermedia/>. See also Alison Weissbrot, "Failure To Launch: Why Xandr's 'Community Garden' Was Always A Long Shot", *AdExchanger*, 6 May 2020, available at <https://www.adexchanger.com/tv-2/failure-to-launch-why-xandrs-community-garden-was-always-a-long-shot/>, observing how Xandr struggled to convert AppNexus into a TV and video buying platform.

<sup>79</sup> See e.g., Kiri Masters, "What's Driving Amazon's \$10 Billion Advertising Business", *Forbes*, 26 July 2019, available at <https://www.forbes.com/sites/kirimasters/2019/07/26/whats-driving-amazons-10bn-advertising-business/>.

<sup>80</sup> CMA Interim Report, paragraph 5.174.

*accumulate, much less exercise durable market power in such a dynamic environment*".<sup>81</sup> As explained above, this is a misleading argument, considering that we do not know the counterfactual. In any event, the authors' description is rather peculiar, considering that the CMA found that "[i]n recent years, the industry has been consolidating, with supply increasingly concentrated in a small number of large providers at each level of the value chain".<sup>82</sup> Indeed, since 2007 Google has been acquiring companies (DoubleClick; AdMeld; AdMob; Invite Media; Adometry) to build an end-to-end ad tech stack. The significant market shares found by the CMA with regard to Google (90% in the case of publisher ad servers; 50%-70% in DSPs; 40%-60% in SSPs),<sup>83</sup> tell a story of monopolization, *not* of a highly dynamic marketplace.

Moreover, in terms of substance, the material provided by the authors is of poor quality and by no means shows a dynamic marketplace. The bulk of the analysis concerns past mergers & acquisition activity which in many cases has proven disastrous (e.g., Facebook acquired Atlas ad server from Microsoft but eventually shut it down and turned it to a measurement pixel;<sup>84</sup> Apple acquired ad network Quattro to launch its iAd network, which it subsequently shut down<sup>85</sup>). The authors continue to confuse by listing irrelevant companies or fringe competitors (e.g., content recommendation platforms Taboola and Outbrain; app-focused platforms AppLovin, Chartboost, MoPub) as "significant" players, recycle empty marketing babbles from non-Google ad tech vendors (e.g., stating that "*Rubicon Project acquired Telaria to form what they claim to be 'the world's largest independent sell-side advertising platform'*") and refer to walled gardens' activity (Microsoft's acquisition of LinkedIn; AT&T's acquisition of Time Warner; TikTok launching a self-serve platform), which is clearly irrelevant.

Relatedly, it is interesting to note that, while the authors attempt to portray Google as the great innovator in ad tech and are eager to baptize every product change Google has made as "innovative",<sup>86</sup> the reality is that most innovation in ad tech is *not* attributable to Google. For

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<sup>81</sup> Google Report, page 42.

<sup>82</sup> CMA Interim Report, paragraph 5.174.

<sup>83</sup> *Ibid.* See also Dina Srinivasan, *supra* footnote 32, pages 19 et seq., noting how Google came to dominate ad tech by engaging in conduct that lawmakers prohibit in other electronic trading markets.

<sup>84</sup> Allison Schiff, "Facebook Shatters Atlas Ad Server, Ending Its Assault On DoubleClick; Atlas To Live On As Measurement Pixel", *AdExchanger*, 18 November 2016, available at <https://www.adexchanger.com/platforms/facebook-shatters-atlas-ad-server-ending-assault-doubleclick-atlas-live-measurement-pixel/>.

<sup>85</sup> Mikey Campbell, "Apple reminds developers of impending iAd App Network shutdown, APIs to be deprecated", *Apple Insider*, 2016, available at <https://appleinsider.com/articles/16/05/18/apple-reminds-developers-of-impending-iad-app-network-shutdown-apis-to-be-deprecated>.

<sup>86</sup> See e.g., Google Report, page 13: "*this paper covers but a few of many innovations and changes that Google has made to Ad Manager*"; page 42: "*[a]s Google's frequent product changes show, one can only keep up in such a rapidly changing industry by constantly innovating*".

one, Dynamic Allocation, which the authors repeatedly describe as “innovative” (despite its serious problems), was not even developed by Google in the first place according to the narrative put forward in the Google Report.<sup>87</sup> More generally, it should be noted that Google’s growth in ad tech has been mostly the result of multiple acquisitions.<sup>88</sup> In fact, the greatest innovation ever since the introduction of the waterfall, namely header bidding, was not developed by Google. Instead, it was devised as a workaround to DFP’s inefficient and unfair setup so that for the first-time demand partners could compete in a unified auction. Google had no interest in solving the inefficiencies of the waterfall for non-Google ad exchanges – something that its customers clearly desired. Given Google’s refusal to participate in header bidding, the latter did not reach its potential: Dynamic Allocation resulted in Google having the “last look” over header bidding. What Google eventually did was to launch after a couple of years its own version of server-side header bidding, which suffers from several drawbacks, which we will discuss below.

#### D. On Google promoting interoperability

Another myth that the authors put forward is that Google fosters “*interoperability and head-to-head competition*” with its ad tech products, which would be “*hard to square with a theory that Google is looking to destroy or weaken competition in ad tech.*”<sup>89</sup> In its separate submission to the ACCC, Google similarly alleges that “*mixing-and-matching is common in ad tech, including among Google’s customers*” and “[i]t would not be in Google’s interests to try to damage this dynamic by acting anti-competitively, such as by limiting interoperability or foreclosing rivals.”<sup>90</sup> Similar statements can be found in Google’s response to the Statement of Scope of the CMA’s Market study in Online Platforms and Digital Advertising.<sup>91</sup>

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<sup>87</sup> See e.g., Google Report, page 13: “*G&K’s theories about Google’s Ad Manager product trace back to an innovation that DoubleClick introduced in 2007, prior to DoubleClick’s 2008 acquisition by Google.*”

<sup>88</sup> See CMA Interim Report, paragraph 5.186: “[w]hile Google’s suite of products has developed significantly over time, it is notable that Google integrated a number of existing products rather than developing its position internally”.

<sup>89</sup> Google Report, page 12. By way of example, the authors refer to (i) DV360 (Google’s DSP) being able to bid on multiple exchanges; (ii) DFP offering the ability to call third-party vendors that provide an appropriate tag; (iii) GAM’s ad exchange accepting bids from multiple ad buyers; and (iv) Open Bidding.

<sup>90</sup> Google Australia Pty Ltd Ad Tech Inquiry Submission in Response to the ACCC’s Issues Paper, 1 May 2020, available at <https://www.accc.gov.au/system/files/Google%20%281%20May%202020%29.pdf>, page 15. In the same page Google also states that “[o]ur products work well together, but we also enable publishers and advertisers to use them with the ad tech products of other providers, and many advertisers and publishers do so to benefit from the different innovative features offered by various ad tech providers.”

<sup>91</sup> Google, Digital Ads Market Study: Response To Statement Of Scope, 30 July 2019, available at [https://assets.publishing.service.gov.uk/media/5d78ba3540f0b61c7a66407c/190802\\_Google\\_-\\_Response\\_to\\_SoS\\_Non-confidential\\_.pdf](https://assets.publishing.service.gov.uk/media/5d78ba3540f0b61c7a66407c/190802_Google_-_Response_to_SoS_Non-confidential_.pdf), page 23 (“[o]ur ‘ad tech stack’ products are available – and can be used – separately, so that advertisers and publishers can mix-and-match between different

It seems the authors have a rather peculiar understanding of “interoperability”, given that the facts contradict the above statements. Examples abound. First, while the authors are keen to describe DV360 as being able to bid on multiple exchanges (the extent to which that *actually* happens we do not know),<sup>92</sup> they conveniently omit any reference to Google Ads. However, as the CMA observed, Google Ads demand is *overwhelmingly* channeled through Google’s own ad exchange, to the effect that publishers “*place a high premium on being able to access AdX demand.*”<sup>93</sup> In other words, publishers cannot afford to lose access to AdX (and its Google Ads demand).

Second, Google’s refusal to participate in header bidding (be it client-side or server-side) means that “*it is difficult for publishers to efficiently access AdX demand from a non-Google ad server.*”<sup>94</sup> In turn, that prevents publishers from switching ad server and shields DFP from competition. As the CMA observed:

“The effect of linking Google Ads demand to AdX and AdX to Google’s publisher ad server is to increase the barriers publishers face in switching from Google to a different ad server, reducing competition in ad serving”.<sup>95</sup>

“Google [...] has made it difficult to access its advertiser demand (especially from Google Ads) through alternative publisher ad servers, thereby increasing its market power in ad serving and making it difficult for other providers to compete on the merits”.<sup>96</sup>

We find it hard to understand how the above can be reconciled with the proposition that Google fosters interoperability and head-to-head competition. This is clearly not the case, despite Google’s hopeless attempts to suggest the contrary in its typical evasive manner. In its response to the CMA’s Interim Report, Google’s counterargument was that Google Ads demand is also

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*services, and multi-home*”) and page 26 (“*[w]e make it straightforward for advertisers and publishers to select some or all of our ad tools and combine these with third-party tools, should they choose to do so*”).

<sup>92</sup> See e.g., Dina Srinivasan, *supra* footnote 32, page 40 (noting how DV360 likely steers ad spend to Google’s own ad exchange).

<sup>93</sup> CMA Interim Report, paragraph 5.213: “[d]emand from advertisers for third-party display inventory through Google Ads is overwhelmingly channeled through Google’s own ad exchange, AdX (now part of Google Ad Manager). Between September 2018 and August 2019, the aggregate value of the impressions won by Google Ads through AdX was [several] times that of impressions won through other third-party exchanges. This suggests that publishers place a high premium on being able to access AdX demand.”

<sup>94</sup> CMA Interim Report, paragraph 5.214. See also paragraph 5.215, where the CMA explains why technical solutions offered by other publisher ad servers to integrate AdX demand are not as efficient as header bidding and present several limitations.

<sup>95</sup> *Id.*, paragraph 5.217.

<sup>96</sup> *Id.*, paragraph 5.237.



available “through third-party channels”, while publishers “can request ads from AdX using a third-party ad server”, in which case “AdX will attempt to fill any such request based on real-time prices”.<sup>97</sup> This does not address the CMA’s findings. Even if publishers may in theory request ads from AdX using a third-party server, no one will do so due to the inefficient setup resulting from AdX not participating in header bidding and thus being unable to compete in real-time against other exchanges (resulting in less revenue for publishers). After all, Google can and does change its behavior with limited warning, creating risk that it could further reduce interoperability with alternative publisher ad servers in the future. And even if publishers may in theory access Google Ads demand through a non-Google exchange, Google Ads demand is *overwhelmingly* channeled through AdX, to the effect that no other exchange can replace AdX and its access to Google Ads.

Third, since 2016 YouTube inventory – which is considered must-have video inventory – is not available on AdX, to the effect that it can be bought programmatically only through Google’s own buy-side tools (Google Ads and DV360).<sup>98</sup> In his testimony to the US House Judiciary Committee in 2019, Brian O’Kelley, co-founder of AppNexus (now part of WarnerMedia), explained how Google’s policy change had a devastating impact on his company.<sup>99</sup> The CMA observed relatedly that Google may use the importance for advertisers of its owned and operated inventory (YouTube) in order to “strengthen its position as a DSP provider in open display”, explaining that “if an advertiser wants to include YouTube in a campaign, it has a strong incentive to use Google’s DSP for the entire campaign”.<sup>100</sup>

Fourth, after DoubleClick’s acquisition, Google decided to scramble DoubleClick ad server IDs differently per customer. In other words, Google started sharing a different ID value with

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<sup>97</sup> Google, Online Platforms and Digital Advertising Comments on the Market Study Interim Report, *supra* footnote 72, paragraph 40.

<sup>98</sup> Kelly Liyakasa, “Google To Yank YouTube Inventory Out Of AdX By Year's End”, *AdExchanger*, 6 August 2015, available at <https://www.adexchanger.com/ad-exchange-news/google-to-yank-youtube-inventory-out-of-adx-by-years-end/>.

<sup>99</sup> Testimony of Brian O’Kelley before the U.S. Senate Committee on the Judiciary, Hearing on Understanding the Digital Advertising Ecosystem and the Impact of Data Privacy and Competition Policy, available at <https://www.judiciary.senate.gov/imo/media/doc/O'Kelley%20Testimony.pdf>, pages 5-6: “[t]his was a devastating move for AppNexus and other independent ad technology companies. [...] Even WPP, our largest customer and largest investors, had no choice but to start using Google’s technology. AppNexus growth slowed, and we were forced to lay off 100 employees in 2016”. See also Allison Schiff, “This Is What The DOJ Is Thinking As It Preps Its Antitrust Case Against Google”, *AdExchanger*, 2 June 2020, available at <https://www.adexchanger.com/platforms/this-is-what-the-doj-is-thinking-as-it-preps-its-antitrust-case-against-google/>, noting with regard to Google’s YouTube policy change: “[t]he fallout for third-party ad tech was immediate. ‘What was the impact on our company? Well, we lost millions of dollars in revenue,’ said one ad tech executive.”

<sup>100</sup> CMA Interim Report, paragraph 5.208.



the advertiser (e.g., 123) than the one shared with the publisher (e.g., abc) for the *same* user.<sup>101</sup> At the same time, Google permitted its *own* ad exchange and buy-side tools to access the DoubleClick ad server's IDs by default. This policy change granted an information advantage on Google over its rivals and “*worked to lock-in clients of the DoubleClick ad server to Google's exchange and buying tools*”.<sup>102</sup>

As a result, Google's own ad tech products suffer from minimal cookie match loss rates. That means that Google's buy-side tools have an advantage over rival DSPs when bidding on auctions run by Google.<sup>103</sup> The reason is that non-Google DSPs have to sync their cookies in order to identify the user (and thus bid appropriately), which however is inefficient and may result to loss-rates of up to 40%.<sup>104</sup> For these reasons, the industry has come up with various initiatives to create a common ID, such as DigiTrust (by IAB), Advertising ID Consortium, ID5 and Universal ID, in an attempt to improve match rates.<sup>105</sup> We understand that Google refuses to join such initiatives, whose very fate is put to question by Google's decision to phase out support for third-party cookies on Chrome within the next two years.<sup>106</sup>

Finally, in 2018 Google relied on the GDPR to restrict the portability of the DoubleClick ID from its buy-side products, which advertisers could previously export in order to perform important functions such as cross-platform measurement, frequency capping and multi-touch attribution.<sup>107</sup> Such data is now available only inside Google's “privacy-centric” measurement

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<sup>101</sup> For a discussion, see Dina Srinivasan, *supra* footnote 32, pages 24-26.

<sup>102</sup> *Id.*, page 26.

<sup>103</sup> See also CMA Interim Report, paragraph 5.227, noting that technical efficiencies arising from cookie matching “*may provide a further advantage for DV360 over competing DSPs*”.

<sup>104</sup> See e.g., Martin Kihn, “Ad Tech Needs A Shared ID Solution ASAP”, *AdExchanger*, 4 September 2018, available at <https://www.adexchanger.com/data-driven-thinking/ad-tech-needs-a-shared-id-solution-asap/>. That means that out of 100 users the DSP will recognize only 60. On the importance of identity in online advertising, see Damien Geradin and Dimitrios Katsifis, Taking a Dive Into Google's Chrome Cookie Ban, *supra* footnote 3, page 4 and pages 7-8. To put in a nutshell, if the DSP cannot identify the user it will not bid or bid low. According to a Google study, cookie-less impressions (where the advertiser cannot identify the user through third-party cookies) result in approximately 52% less revenue for publishers. See Deepak Ravichandran and Nitish Korula, “Effect of disabling third-party cookies on publisher revenue”, 27 August 2019, available at [https://services.google.com/fh/files/misc/disabling\\_third\\_party\\_cookies\\_publisher\\_revenue.pdf](https://services.google.com/fh/files/misc/disabling_third_party_cookies_publisher_revenue.pdf).

<sup>105</sup> Maciej Zawadzinski and Michael Sweeney, “Identity in AdTech: Meet The Various ID Solutions”, *The Clearcode Blog*, available at <https://clearcode.cc/blog/adtech-id-solutions/>.

<sup>106</sup> Seb Joseph, “With third-party cookies on the way out, shared IDs face an existential crisis”, *Digiday*, 30 January 2020, available at <https://digiday.com/marketing/third-party-cookies-way-shared-ids-face-existential-crisis/>.

<sup>107</sup> Alisson Weissbrot, “Google Sharply Limits DoubleClick ID Use, Citing GDPR”, *AdExchanger*, 27 April 2018, available at <https://adexchanger.com/platforms/google-sharply-limits-doubleclick-id-use-citing-gdpr/>. For a discussion of this policy change, see Damien Geradin, Dimitrios Katsifis and Theano

and activation solution, Ads Data Hub, which was originally developed for YouTube and sits under Google’s cloud offering. Marketers are prohibited from exporting from Ads Data Hub anything other than aggregated insights. It was recently reported that Google tests offering marketers the ability to also create audiences through Ads Data Hub which they may then target, but *only* through DV360 (and not through a different DSP), supposedly for privacy reasons.<sup>108</sup>

#### **IV. Our response to the many mistakes and inaccuracies contained in the Google Report**

In this Part, we rebut in detail the various allegations of the authors in the Google Report. We first provide a summary of our past research in Google’s conduct in ad tech (Section A). We then carefully examine the authors’ description of the evolution of RTB and Google Ad Manager, exposing their various omissions and inaccurate statements (Section B). Finally, we show why the authors’ criticism of our analysis and their argument that Google’s ad tech products and practices have promoted and not harmed competition fail to convince (Section C).

##### **A. Summary of our past research**

In our first major ad tech paper,<sup>109</sup> we introduced the reader to the complex world of programmatic advertising and explained the role of the various ad tech players. After identifying Google as the leading – and likely dominant – player across the ad tech supply chain, we examined several of its practices which we think raise competition concerns. More specifically, we explained how over the years Google has used the leading position of its publisher ad server DFP, now part of GAM, to favor its own ad exchange AdX (now also part of GAM) to the detriment of rivals.

Originally, publishers would manage their demand sources in a waterfall setup within the ad server, whereby they would place first their direct deals (represented by “guaranteed line items” within DFP), followed by their remnant demand partners, initially ad networks and later ad exchanges (represented by “remnant line items” within DFP). The publishers prioritized ad exchanges according to the price they estimated they would return once called based on

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Karanikioti, GDPR Myopia: How a Well-Intended Regulation ended up Favoring Google in Ad Tech *supra* footnote 3, pages 30-31.

<sup>108</sup> James Hercher, “Google Tests Audience Buying In ADH, A Big Step From Analytics To Activation”, *AdExchanger*, 26 March 2020, available at <https://www.adexchanger.com/online-advertising/google-tests-audience-buying-in-adh-a-big-step-from-analytics-to-activation/>.

<sup>109</sup> Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, *supra* footnote 3.

historical data instead of real-time demand. In the waterfall setup, assuming that no direct deal was eligible to serve, the ad server would offer the impression to the ad exchange ranked first; if the impression was not sold, it would be offered to the next ad exchange in the waterfall and so on, until the impression was finally sold. This system was inefficient and resulted in less publisher revenue, considering that an ad exchange later down the waterfall could submit a higher price but never got the chance to do so. Ad exchanges were thus captive of their estimated demand and could not compete against each other on the basis of their real-time demand.

However, a DFP feature called Dynamic Allocation granted AdX the unique ability to compete against other exchanges based on its real-time demand. In that case, DFP would select the remnant line item with the highest (estimated) price (corresponding to the exchange ranked highest in the waterfall), and would give AdX the ability to win the impression if it could offer a slightly higher price. If AdX could, then it would secure the impression and no other exchange would be called. If AdX could not offer a higher price, then the impression would be offered to the exchange ranked first in the waterfall. In other words, Dynamic Allocation enabled AdX to cherry pick high-value impressions ahead of other exchanges. In addition, it enabled AdX to secure impressions at artificially low prices, given that it competed against the estimated price of rival exchanges, which could be lower than the actual price they could return in real-time. Google later “enhanced” Dynamic Allocation, so that AdX could outbid even direct deals.

In an attempt to work around DFP’s inefficient setup, whereby only AdX could compete on the basis of its real-time demand while other ad exchanges were prisoners of the waterfall, publishers resorted to a technique called “header bidding”. Header bidding is an auction that happens *before* the ad server is even called. Importantly, header bidding is a unified auction, whereby all ad exchanges may compete against each other in real-time. Header bidding can be client-side (whereby it is run by the browser) or server-side (whereby it is run in the servers of a third-party). Once the header bidding auction is over, the bids returned by the ad exchanges are fed into DFP where they are matched with remnant line items. Google refused to have AdX participate in header bidding. Header bidding nevertheless allowed rival ad exchanges to compete for the first time on the basis of their real-time demand and led to substantial programmatic revenue growth for publishers. However, the existence of Dynamic Allocation resulted in AdX having the “last look”, whereby it would be called by DFP and given the opportunity to outbid the header bidding winning bid by a penny.

In response to header bidding, Google launched Exchange Bidding in Dynamic Allocation (now called “Open Bidding”), its own server-side version of header bidding, whereby integrated third-party exchanges may compete in real-time against AdX. Even so, Open Bidding, as any form of server-side header bidding, suffers from a lack of transparency and cookie syncing inefficiencies. Moreover, it is an auction run by Google on its own servers and

where Google also participates while collecting the bidding data of its rivals. Last, Open Bidding results in an additional of 5-10% fee on publisher revenue whenever the impression is won by a competing (non-Google) exchange.

As a result of this setup, the same impression could pass through multiple consecutive auctions run by Google before being finally secured by an advertiser: *first*, an auction run by Google Ads between advertisers; *second*, an auction run by AdX among DSPs/ad networks; *third* an auction run by Google among third-party exchanges that have integrated with AdX (the Open Bidding auction).

In the same paper, we explained how the existence of the first two consecutive auctions (the Google Ads auction and the AdX auction) gives Google the ability to engage in “arbitrage” and appropriate the difference between the price charged to the Google Ads winning advertiser and the price paid to the publisher. We noted how Google Ads maximizes such margin when it is able to secure an impression at a lower price while at the same time charging advertisers the highest possible price.

A couple of months after the publication of our first paper, Google announced it would transition Google Ad Manager to a single unified first-price auction (the “Unified Auction”), allegedly in a move to create “*a fair and transparent market for everyone*”.<sup>110</sup> Eager to see whether that was indeed the case, we published our second major ad tech paper,<sup>111</sup> in which we analyze the various aspects of Google’s switch to a Unified Auction, namely: (i) the unification of the auction (the AdX auction has collapsed into the Open Bidding auction; note however that Google Ads still runs its internal auction); (ii) the first-price nature of the auction; (iii) the introduction of so-called Unified Pricing Rules (which preclude publishers from introducing buyer-specific floors); and (iv) the introduction of a new Bid Data Transfer file which includes bidding data (and which publishers cannot link to other GAM Data Transfer files).

Next, we examined whether these changes deliver on the promised “fairness” and “transparency” and whether they address our concerns, as laid down in our first paper. We concluded they do not. We observed that, far from being “transparent”, the Unified Auction is, much like Open Bidding, a “black box” where Google runs the auction while also participating in it and collecting the bidding data of its rivals. We also expressed skepticism as to whether Google’s switch to the Unified Auction resulted indeed in the removal of the infamous “last look”. We then observed that Google appears to take subtle measures to undermine header

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<sup>110</sup> Sam Cox, “Simplifying programmatic: first price auctions for Google Ad Manager”, 6 March 2019, available at <https://www.blog.google/products/admanager/simplifying-programmatic-first-price-auctions-google-ad-manager/>, last accessed on 27 May 2020.

<sup>111</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3.

bidding. In particular, we examined how the introduction of the “minimum bid to win” feature may incentivize buyers to steer their ad spend away from header bidding and towards Google-controlled programmatic channels (namely Open Bidding and Authorized Buyers) and how removing the ability to link GAM Data Transfer files makes it harder for publishers to measure the incremental value brought by header bidding demand partners. Finally, we noted how the introduction of the Unified Pricing Rules, whereby publishers can no longer set buyer-specific floors, may have actually enlarged Google Ads’ margin, by enabling it to secure publisher inventory at a lower price.

## B. The authors’ description of the evolution of RTB and Google Ad Manager

In Section IV of the Google Report, the authors describe the evolution of Real-Time Bidding (RTB) and Google Ad Manager, starting with the waterfall and then moving on to Dynamic Allocation, Enhanced Dynamic Allocation, Header Bidding, Open Bidding and the Unified Auction. To a large extent the authors’ description is in line with ours’ and the CMA’s understanding of the evolution of RTB and Google Ad Manager, as laid down in Appendix H to its Interim Report. However, the authors’ description includes several important omissions, interesting admissions as well as misleading statements. We examine these below.

### 1. Dynamic Allocation

The authors’ description of Dynamic Allocation is plainly misleading, for it focuses on how it functioned at the early stages of programmatic advertising. It might give readers the impression that this is how Dynamic Allocation functioned throughout the years. Yet, the effects of Dynamic Allocation with which we have taken issue in our papers likely emerged years after Dynamic Allocation was first invented, for reasons that we explain below.

As a preliminary remark, we note that even if Dynamic Allocation was developed in 2007 by DoubleClick before the latter’s acquisition by Google, that is irrelevant. At the time, DoubleClick’s ad exchange was not yet fully commercialized. As the European Commission observed in its *Google / DoubleClick* decision:

“DoubleClick is launching a new ad exchange service named DoubleClick Ad Exchange [...] This Ad Exchange commenced beta testing in June 2007. Such an exchange, however, has not yet achieved full commercialization. The current participants ([<50]\* buyers and [<50]\* sellers in the United States) conducted a total of [...] million transactions in November 2007 (when for instance Right Media Exchange achieved 145 billion transactions in July 2007, that is to say DoubleClick’s Ad Exchange achieved transaction volumes equal to less than [1%]\* of Right Media’s exchange).”<sup>112</sup>

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<sup>112</sup> Commission Decision in Case COMP/M.4731, Google/DoubleClick, paragraph 191.

After the acquisition was approved Google eventually launched the Google DoubleClick Ad exchange in September 2009.<sup>113</sup>

The authors' description of Dynamic Allocation includes no reference as to how it gave AdX a unique advantage over remnant line items. This is a glaring omission, but as we will see the authors later admit that competition between AdX and remnant line items did not happen on equal terms. A possible reason for this one-sided description of Dynamic Allocation is the authors' attempt to create confusion by referring selectively to how this feature functioned when publishers used ad networks (instead of ad exchanges) to sell remnant inventory. This would be in line with the authors' approach already noted in the introduction, which is to focus on the two extreme points (when Dynamic Allocation was first launched and today) and remain silent over what happened in between. Our aim is to fill this gap.

In the days where publishers sold their remnant inventory to ad networks on the basis of non-guaranteed deals (meaning that the deal was “pre-emptible”, i.e. the publisher could decide to sell inventory to another network offering a higher price) and upfront negotiated fixed prices, Dynamic Allocation might have made sense. Imagine a scenario where a publisher had struck a non-guaranteed deal with Ad Network X to sell impressions at e.g., \$ 1.00 CPM. For simplicity we assume that the publisher had no other non-guaranteed deal (or it had but Ad Network X was ranked first in the waterfall, after direct deals). What Dynamic Allocation did was to call AdX and ask it if in real-time it could solicit a bid (through its real-time auction) above \$ 1.00 CPM, e.g., \$ 1.20 CPM. If it could, the AdX buyer would get the impression, AdX would earn its commission and the publisher would earn an incremental \$ 0.20 CPM. Ad Network X could not really complain as it had already submitted a price on a non-guaranteed basis (meaning that the seller could sell for a higher price), which was then outbid by a later bidder.

This is in line with the two Google White Papers from 2010/2011, which explained how Dynamic Allocation worked and how it drove revenue for publishers. According to a 2010 study from Google, Dynamic Allocation resulted in an average CPM lift of 136% “*compared with fixed, upfront, pre-negotiated sales of non-guaranteed inventory.*”<sup>114</sup> A later study – which

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<sup>113</sup> Google's DoubleClick Ad Exchange Is Officially Launched Says VP Neal Mohan, *AdExchanger*, 18 September 2009, available at <https://www.adexchanger.com/ad-exchange-news/google-doubleclick-ad-exchange-launched-part/>.

<sup>114</sup> Profiting from Non-Guaranteed Advertising: The Value of Dynamic Allocation & Auction Pricing for Online Publishers, DoubleClick, (2010) available at [http://static.googleusercontent.com/media/www.google.com/en/us/adexchange/DC\\_Ad\\_Exchange\\_WP\\_100713.pdf](http://static.googleusercontent.com/media/www.google.com/en/us/adexchange/DC_Ad_Exchange_WP_100713.pdf).

for some reason is no longer available on Google’s blog – confirms the methodology Google followed to calculate the incremental revenue Dynamic Allocation drove:

“Since mid-2010, we have been recording the counterfactual – the price at which individual impressions would have sold had the Exchange [AdX] not won the auction – enabling researchers to measure revenue lift more accurately. [...] Thus equipped, Google’s research team was able to quantify the impact of DoubleClick Ad Exchange on publisher revenue by comparing the Ad Exchange winning price with the publisher’s pre-booked price (the third-party CPM threshold, including those instances when the publisher had booked a zero-value minimum).”<sup>115</sup>

All this might have sounded nice back in the days of ad networks agreeing to buy inventory on a fixed, upfront-negotiated price. But the effects of Dynamic Allocation became very different once ad networks evolved to offer – much like AdX – real-time capabilities and/or were replaced in the waterfall by ad exchanges. The authors are silent about this important development, and so has Google been throughout the years. Unlike the static ad networks of the old times, ad exchanges could return in real-time a different bid than what the publisher had estimated. In this case, the counterfactual might have been very different.

Consider a scenario whereby the publisher had booked Ad Exchange X at \$ 1.00 CPM based on its estimated performance (the publisher had indeed no technical means to insert Ad Exchange X’s real-time demand in the ad server, so it had to rely on estimates as proxies). As a result of Dynamic Allocation, AdX was called to see whether it could in real-time solicit a higher bid, e.g., \$ 1.20 CPM, ostensibly making an incremental \$ 0.20 CPM yield for publishers. Ad exchange X was never called.

But what if, once called, Ad Exchange X could return in real-time a bid of \$ 1.30 CPM? The counterfactual would be an extra \$ 0.30 CPM for publishers, i.e. \$ 0.10 CPM more than that offered by AdX. In that case, Dynamic Allocation would result in publishers *losing* revenue. That is also illustrated by the fact that header bidding – which exposed AdX to real-time competition from other exchanges for the first time – resulted in increased publisher yield, in some cases up to 50% or even 70%.<sup>116</sup>

Second, Dynamic Allocation may have well led to allocative inefficiencies, as shown in the example above: to the extent a higher price reveals a higher willingness to pay, then the

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<sup>115</sup> DoubleClick Ad Exchange’s Impact on Publisher Revenue, DoubleClick, (2011) available at web archive [https://web.archive.org/web/20110124021057/http://static.googleusercontent.com/external\\_content/untrusted\\_dlcp/www.google.com/en/us/doubleclick/pdfs/DC\\_Ad\\_Exchange\\_WP\\_110117.pdf](https://web.archive.org/web/20110124021057/http://static.googleusercontent.com/external_content/untrusted_dlcp/www.google.com/en/us/doubleclick/pdfs/DC_Ad_Exchange_WP_110117.pdf).

<sup>116</sup> Jessica Davies, “The Telegraph used header bidding to increase programmatic revenue by 70 percent”, *Digiday*, 24 May 2017, available at <https://digiday.com/media/telegraph-used-header-bidding-increase-programmatic-revenue-70-percent/>.

advertiser valuing the impression more was simply prevented from purchasing it because AdX would secure the impression.

Third, Dynamic Allocation made it easier for Google to “cream skim” to the detriment of rival exchanges, namely picking the best impressions while leaving the rest for its rivals. Such “cream skimming” was made possible due to Google’s information advantage over rival exchanges e.g., in identifying users and recognizing the value of the impression (in terms of e.g., the user’s likelihood to engage with the ad because, for instance, the impression is shown early on in the user’s session or because the user is known to be prone to clicking on ads).<sup>117</sup> As a result of this information asymmetry, rival exchanges would generally return lower bids compared to AdX. In turn, that allowed AdX to “cream skim” by cherry-picking the best impressions at a low price. Dynamic Allocation made “cream skimming” for AdX even easier, as AdX competed against the *estimated* price, i.e. not even the real-time bid of rival exchanges. This means that, even in specific cases where another exchange happened to be in a position to return a higher bid in real-time than AdX, that exchange did not even get the chance to do so. As a result, rivals were only left with low-value impressions, which resulted in their bids being depressed even more, and the vicious cycle would carry on.<sup>118</sup>

Conveniently for Google, the authors do not address *any* of these issues in the Report. This omission is interesting for two reasons. First, the set-up of Dynamic Allocation harmed Google’s rivals and thus should be at the core of any antitrust investigation of Google’s practices. The fact that the authors ignore this issue suggests Google may be short of arguments to address our concerns. This omission is also odd since the authors essentially admit the unfair setup of Dynamic Allocation when they describe Open Bidding (originally called Exchange Bidding) pre- and post- Unified Auction:

“With Exchange Bidding, Google enabled publishers to create real-time competition among AdX and other ad exchanges within Ad Manager...”<sup>119</sup>

[...] Ad Manager enables publishers to solicit real-time bids through a variety of ad exchanges, including not just AdX but also more than 20 other ad exchanges

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<sup>117</sup> For an explanation of how Google, after the DoubleClick acquisition, bestowed upon its own exchange an information advantage over rival exchanges by restricting rivals’ access to DoubleClick ad server IDs while at the same time permitting its own exchange and buying tools to access them by default, see Dina Srinivasan, *supra* footnote 32, pages 24-28.

<sup>118</sup> See also Fiona M. Scott Morton and David C. Dinielli, *supra* footnote 23, page 24 and especially footnote 101, explaining how Google’s ability to “cream skim” depresses the overall bid values over time to the detriment of publishers. See also Ittai Abraham, Susan Athey, Moshe Babaioff, and Michael Grubb, (2013) Peaches, lemons, and cookies: designing auction markets with dispersed information, in *Proceedings of the fourteenth ACM conference on Electronic commerce*, Association for Computing Machinery, New York, NY, USA, 7–8. DOI: <https://doi.org/10.1145/2482540.2482557>.

<sup>119</sup> Google Report, pages 19-20.



participating in Open Bidding (formerly called “Exchange Bidding”. These third-party ad exchanges can submit real-time bids into Ad Manager like bids that come into Ad Manager from ad buyers on AdX, such as Google Ads, DV360, or other Authorized Buyers (e.g., third-party DSPs, ad networks, ad agencies etc.).”<sup>120</sup>

This is precisely what rival ad exchanges could not do for years as Open Bidding was launched only in 2018. While from 2015-2016 onwards header bidding allowed exchanges to insert their real-time demand and thus exert competitive pressure on AdX, the latter had the so-called “last look” advantage, which still allowed it to capture impressions at will. What is more, we will see that Open Bidding comes with considerable drawbacks, such a 5%-10% fee on publisher revenue, cookie syncing inefficiencies and an inherent lack of transparency.

## 2. Enhanced Dynamic Allocation

Enhanced Dynamic Allocation is described as yet another “innovation”, which enabled AdX buyers and other remnant demand sources to “*compete not only with each other*” (as if such competition existed on fair terms), but also with guaranteed deals. The authors note that

“to the extent that G&K’s [sic] claim that EDA [Enhanced Dynamic Allocation] allowed AdX to ‘jump even ahead of direct deals in the waterfall’ or gave it some special advantage over other remnant line items, that is not correct given that other remnant line items could win out over guaranteed line items under EDA”.<sup>121</sup>

This argument entirely misses the point. We never said Enhanced Dynamic Allocation gave AdX some special advantage over other remnant line items. That special advantage had already been granted already under the plain-vanilla Dynamic Allocation; it consisted in AdX’s unique ability to compete against remnant line items on the basis of its real-time demand. What Enhanced Dynamic Allocation did in addition was to enable AdX to disregard the priority of direct deals, provided it could return a bid beating the temporary CPM Google’s algorithm calculated for the guaranteed line item (with no visibility into how such calculation took place, other than the general statement that it takes into account the delivery progress of the direct deal). The extent to which a remnant line item could, as a result of Enhanced Dynamic Allocation, also beat a guaranteed line item is irrelevant and does not respond to our criticism.

## 3. How Header Bidding emerged

The authors’ description of the emergence of header bidding includes egregious omissions, resulting in a distorted depiction of reality. In particular, the authors of the Google Report

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<sup>120</sup> Google Report, page 22 (internal citation omitted).

<sup>121</sup> Google Report, page 17, footnote 48.

would like us to believe that header bidding emerged as a result of industry-wide protocols for real-time bidding, without citing any sources for such an allegation:

“Several years after DoubleClick created Dynamic Allocation, the industry began developing industry-wide protocols for real-time bidding. The OpenRTB Consortium was formed for that purpose around 2011. Industry adoption of the protocols they developed occurred around 2012, when the protocols became the IAB standard. Based on those protocols, industry participants began developing auction solutions that enabled real-time bidding among multiple ad exchanges. This ultimately led to the emergence of header bidding.”<sup>122</sup>

Once more, the authors cherry pick facts and tell only part of the story. Header bidding did not emerge because the industry decided to standardize real-time bidding protocols. It is indeed highly unlikely that those who developed header bidding would have taken three years (until 2015) to come up with a bidding mechanism which allegedly emerged as a result of the OpenRTB protocol of 2012.

What the authors of the Report want to elude is that header bidding emerged as a “hack” to solve DFP’s inefficiency of not allowing ad exchanges to compete against each other in real-time – and which Google had done nothing to address, being comfortable with having only AdX able to do so. Header bidding was a way for publishers to get around DFP’s unfair setup, where their remnant demand partners could be booked only at a fixed price – typically an *estimated* CPM – while AdX could compete on the basis of its real-time demand.

Header bidding was thus a way for publishers to have all non-Google exchanges compete side-by-side in real-time and thus obtain a more accurate view of the value of their inventory. It also enabled advertisers bidding through non-Google exchanges to see every single impression and express their valuation for it, while previously they were limited only to the impressions that AdX allowed to cascade through the waterfall. In our papers we quote industry commentators explaining how header bidding emerged as a response to Google and DFP’s unfair and inefficient setup, and we are happy to provide more.<sup>123</sup>

The beginning of a 2017 article from Digiday on header bidding provides a neat summary:

“Fed up with how Google’s ad server favored its own exchange, over the past two years many publishers restructured their tech stacks to simultaneously offer inventory to

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<sup>122</sup> Google Report, page 17 (internal citations omitted).

<sup>123</sup> See e.g., Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, *supra* footnote 3, page 79, referring to Gavin Dunaway from AdMonsters stating that “[t]heoretically, Dynamic Allocation could enable AdX bidders to pay less for impressions than other partners would be willing to, therefore starving the publisher of revenue. This seemingly unfair setup spurred the adoption of header bidding.”

multiple exchanges before making their ad calls. Since this approach has helped pubs drive revenue and dial back Google’s competitive advantage, it caught like wildfire. The strategy is widely known as header bidding, and it is the du jour topic at ad tech conferences.”<sup>124</sup>

In another 2017 Digiday article it is noted how “[h]eader bidding started as a short-term hack — a neat trick introduced to circumvent the inefficiencies of the waterfall process.”<sup>125</sup> According to Ratko Vidakovic, a leading industry commentator, “[h]eader bidding has exposed the glaring deficiency in Google’s DFP ad server. It was designed as a waterfall, and the Dynamic Allocation feature was obviously introduced for self-serving reasons.”<sup>126</sup>

It is hardly surprising that the authors address none of these issues. As we have noted elsewhere, Google sees header bidding as a threat and has an incentive to undermine it. Industry commentators have on several instances described how Google has attempted to “quash” or “kill” header bidding by launching Open Bidding.<sup>127</sup> Google never accepted to participate in header bidding – be it client-side or server-side – where AdX would be exposed to real-time competition *on equal terms* with competing exchanges. The only way that AdX could ever be exposed to real-time competition would be through an auction conveniently held on Google’s own servers (Open Bidding), and with a hefty fee charged on publishers selling their inventory to a non-Google ad exchange.

#### 4. The alleged “drawbacks” of Header Bidding and the “benefits” of Open Bidding

According to the authors, Google did not participate in header bidding as it “*already had an efficient auction mechanism with Dynamic Allocation and AdX, in which many different Google-owned and third-party ad buyers competed*”, while header bidding had the potential for “*adverse effects on users, advertisers and the ecosystem*”.<sup>128</sup> We have already discussed in detail how Google did not have an efficient (or fair) auction mechanism with Dynamic Allocation and AdX. This is precisely why header bidding emerged.

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<sup>124</sup> Ross Benes, “‘An ad tech urban legend’: An oral history of how header bidding became digital advertising’s hottest buzzword”, *Digiday*, 16 June 2017, available at <https://digiday.com/media/header-bidding-oral-history/>.

<sup>125</sup> Jessica Davies, “The publisher guide to the state of header bidding”, *Digiday*, 7 June 2017, available at <https://digiday.com/media/cheatsheet-header-bidding/>.

<sup>126</sup> Ratko Vidakovic, “The Beginner’s Guide To Header Bidding”, *AdProfs*, last updated on 21 March 2019, available at <https://adprofs.co/beginners-guide-to-header-bidding/>.

<sup>127</sup> See e.g., Sara Sluis, “AppNexus Strikes Back Against Google’s Attempt To End Header Bidding”, *AdExchanger*, 17 May 2016, available at <https://www.adexchanger.com/ad-exchange-news/appnexus-strikes-back-against-googles-attempt-to-end-header-bidding/>.

<sup>128</sup> Google Report, page 19.

We now address the apparent shortcomings of client-side header bidding which supposedly render it a threat for the ecosystem and justified Google’s decision to not participate in it. The authors argue that

“client-side header bidding implementations are associated with (i) page load latency; (ii) discrepancies in performance metrics used to determine advertiser invoices; (iii) compromised user trust, security and privacy; and (iv) high engineering and setup costs.”<sup>129</sup>

Header bidding is also said to have exacerbated the issue of advertiser self-competition, which we explore in more detail in the next sub-section, given that it is a topic raised throughout the Report and thus deserves separate discussion.

Google nevertheless decided to launch its own alternative to header bidding, apparently because “*popularity of header bidding grew among publishers, and the industry moved in that direction.*”<sup>130</sup> The alternative, Open Bidding, is said to have solved some of the drawbacks of header bidding:

“Open Bidding does not generate significant latency, and provides clear and aggregated reporting all in one place, a significant simplification for publishers. Google’s Open Bidding reportedly is easy to set up and does not generally require custom engineering work. Open Bidding also comes with greater measures to protect user privacy.”<sup>131</sup>

Google’s arguments against header bidding are pretextual. First, we should emphasize that almost the entirety of Google’s criticism (page latency, reporting discrepancies, engineering set up costs) concerns only *client-side* header bidding; it does not apply to *server-side* header bidding. Google could very well have AdX participate in a server-side header bidding solution *not* hosted by itself, such as Prebid Server (provided by the industry organization Prebid.org) or Amazon’s TAM. That would have been a much more neutral approach than having the auction held on its servers.

Second, the fact that client-side header bidding might entail “*high engineering and setup costs*” is irrelevant; if publishers are willing to incur such costs (and many are more than happy to do so) because header bidding increases their yield, Google has no reason to complain.

Third, Google’s arguments concerning page latency hold no sway. Suggesting that Google cares more about page latency than any individual publisher due to its impact on the ecosystem

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<sup>129</sup> Google Report, page 18 (internal citations omitted).

<sup>130</sup> Google Report, page 19.

<sup>131</sup> Google Report, page 20 (internal citations omitted).

as a whole defies basic rationality. Each individual publisher has the same interest to ensure that users will not turn to ad blockers as a result of page latency: if users do, then no ads will be served, and the publisher will lose revenue. Ad tech vendors are equally affected, as they will not be able to earn their commission, which in many cases is expressed as a percentage of publisher revenue. Publishers care deeply about striking the right balance between optimal user experience and adequate monetization. Even assuming that longer page loading times could lead to an ad blocker uptake (which is not obvious),<sup>132</sup> individual publishers would have more to lose than Google, considering that popular ad blockers (including Adblock Plus) do not block (at least not by default) ads shown on Google Search, which is where Google makes most of its revenue – and we doubt whether consumers would take extra steps to block search ads (as display and video ads are generally more intrusive).<sup>133</sup>

There is thus no reason why Google is better suited than any individual publisher to be the arbiter of the optimal page loading speed. As regards client-side header bidding in particular, publishers can take specific measures to ensure it does not impact page latency and user experience, by, for instance, limiting the number of demand partners that run on the header and setting strict auction time-outs (after which the header bidding auction is over). As pointed out by an industry commentator under the heading of “header bidding myths”:

“[...] many point to latency as a key problem for header bidding, and it’s true that latency can be a problem if you don’t manage it as part of your setup. However, if you set a specific timeout limit to your header bidding tags, you can cap the amount of latency to an acceptable level. In some cases, your latency may actually improve with a header bidding solution because it may eliminate long daisy-chain setups that are highly latent today but more difficult to measure”.<sup>134</sup>

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<sup>132</sup> Page latency is only one of the reasons why users turn to ad blockers. More often cited reasons include: too many ads are annoying or irrelevant; there are too many ads on the internet; ads are too intrusive; ads contain sometimes viruses or bugs; ads take too much screen space; to avoid having to see video ads before watching clips/shows. See Amy He, “Ad Blocking Growth Is Slowing Down, but Not Going Away”, *eMarketer*, July 2019, available at <https://www.emarketer.com/content/ad-blocking-growth-is-slowing-down-but-not-going-away>.

<sup>133</sup> To the best of our knowledge, only uBlock Origin blocks by default search ads on Google Search. Note that Eyeo, owner of Adblock Plus, offers advertisers the possibility to exclude (for a fee) certain ads from the ad-blocking process (whitelisting), provided the ads meet the “Acceptable Ads” criteria. Google had concluded with Eyeo such a whitelisting contract, which triggered an investigation from the Bundeskartellamt and the Austrian Competition Authority. The Bundeskartellamt took issue with by additional clauses in the whitelisting contract which seemed to restrict Eyeo’s possibilities to further develop its products, expand and invest in the market. The proceedings were eventually terminated after Google and Eyeo amended their agreement. See “Proceeding against whitelisting contract between Google and Eyeo terminated after amendments to the contract”, available at <https://webgate.ec.europa.eu/multisite/ecn-brief/en/content/proceeding-against-whitelisting-contract-between-google-and-eyeo-terminated-after-amendments>.

<sup>134</sup> Ben Kneen, “Header Bidding Explained Step-By-Step”, *Ad Ops Insider*, 8 June 2015, available at <http://www.adopsinsider.com/header-bidding/header-bidding-step-by-step/>. See also Ratko Vidakovic, *supra* footnote 126: “One challenge of header bidding is the latency added to page loading. The header

It should also be noted that publishers may use specific software (so-called “wrappers”) in order to manage demand partners and set time-outs in a centralized manner, and to have the header auction happen asynchronously, so that it does not affect the rest of the page loading.<sup>135</sup>

Fourth, concerns about reporting discrepancies relating to client-side header bidding are grossly overstated. The article, which the authors refers to,<sup>136</sup> should be read with great caution, not least because (a) it offers no support for the alleged 50 % reporting discrepancy and (b) it was written by the founder of Staq, a company whose products inter alia track discrepancies.<sup>137</sup> We would not be surprised if the author simply wanted to market its offering. In any event, reporting discrepancies are inherent in online advertising, and, when it comes to header bidding, there are several ways in which they can be managed, so that they remain at acceptable levels.<sup>138</sup> If reporting discrepancies were truly problematic, publishers would not use header bidding at all, whereas it is a popular solution. This means that any potential negative effect arising from discrepancies is outweighed by the increased publisher yield. It should also be noted that, according to commentators, header bidding may have actually *decreased* the discrepancies that existed under the inefficient waterfall setup.<sup>139</sup>

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*auction process takes longer than a typical RTB auction on a single exchange, which generally times out at 100 milliseconds. However, since many publishers use multiple exchange partners in a traditional waterfall setup, such latency has always been there. It just hasn't been in the header. Header bidding asks for multiple demand sources to put forth their best price, so several RTB auctions happen simultaneously. As a result, publishers need to manage their timeouts so that no one partner will hold up the header auction and jeopardize page loading. Ideally, the overall timeout should be kept below 500 milliseconds, or half a second.”*

<sup>135</sup> Ratko Vidakovic, *supra* footnote 126: “In the early days of header bidding, publishers would manage their header auction partners manually. This proved to be cumbersome and inefficient, so they moved to using header bidding wrappers (or containers) to make the process more efficient. Header bidding wrappers are like tag management systems but for header bidding partners. They [...] allow important settings, such as a centralized timeout, to be configured, enforcing a hard deadline for the header auction. They also ensure that the header auction happens asynchronously, so that it won't negatively affect the rest of the page loading.”

<sup>136</sup> James Curran, “For Publishers, Header Bidding Discrepancies Can Outweigh Revenue Lift”, *AdExchanger*, 8 July 2016, available at <https://www.adexchanger.com/the-sell-side/publishers-header-bidding-discrepancies-can-outweigh-revenue-lift/>.

<sup>137</sup> See <https://www.staq.com/>.

<sup>138</sup> See e.g., Sovrn, “How to Reduce Header Bidding Discrepancies”, last updated 4 September 2019, available at <https://www.sovrn.com/support/how-to-reduce-header-bidding-discrepancies/>.

<sup>139</sup> See e.g., Ratko Vidakovic, *supra* footnote 126: “Some degree of discrepancy is always inevitable in the online advertising space. But discrepancies are exacerbated when impressions are constantly passed across multiple ad servers and JavaScript tags, where latency is usually introduced. Because header bidding is a single auction that happens across multiple partners simultaneously, there is no sequential daisy chaining of partners (and their associated ad tags), which drastically reduces reporting discrepancies.”

Fifth, the privacy issues which the authors raise are far from being unique to client-side header bidding. The articles cited by the authors in support of their arguments concern the issue of so-called “data leakage”, whereby demand partners (e.g., exchanges participating in header bidding) can create user profiles by simply receiving bid requests (and any data that is included therein) – or in the industry jargon, “*listening to the bidstream*”.<sup>140</sup> The issue of data leakage is nothing new in RTB auctions, and the use of data is typically governed by contractual terms agreed between the parties (e.g., between the publisher and the ad tech vendors it uses). In fact, the issue of data leakage existed already in the waterfall era, the only difference being that under the waterfall setup, ad exchanges did not “listen to the bidstream” at the same time, since they were called sequentially (according to their ranking). As noted by an industry commentator,

“[...] data leakage is an overblown concern for virtually all publishers because if you sell a significant amount of inventory to the exchange today, you are already exposing all your users to a variety of other platforms, which can know each user was on your site”.<sup>141</sup>

The same issue of data leakage may arise regardless of whether the publisher uses a client-side or server-side (like Open Bidding) header bidding solution.

We would thus be interested to hear what Google has done to address the issue of data leakage in Open Bidding. The authors claim that “*Open Bidding also comes with greater measures to protect user privacy*”,<sup>142</sup> but in the footnote refer to a blog post by Jason Bigler (then Director of Product Management at Google) on Google’s switch to the Unified Auction. The blog post has *nothing* to do with Open Bidding. The only measure Jason Bigler refers to as protecting user privacy, namely preventing publishers from joining Google Ad Manager Data Transfer files, is unrelated to Open Bidding.

We are unaware of any greater measure that Google has taken in Open Bidding to protect user privacy. From what is publicly available, we know that within the context of Open Bidding Google passes on bid requests to integrated third-party exchanges (so-called Open Bidders) using a modified version of the Ad Exchange real-time bidding protocol buffer or the

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<sup>140</sup> See e.g., Ross Benes, “‘We get audience data at virtually no cost’: Confessions of a programmatic ad buyer”, *Digiday*, 16 January 2018, available at <https://digiday.com/marketing/get-audience-data-virtually-no-cost-confessions-programmatic-ad-buyer/>.

<sup>141</sup> Ben Kneen, “Header Bidding Explained Step-By-Step”, *supra* footnote 134.

<sup>142</sup> Google Report, page 20.

OpenRTB protocol buffer (developed by the IAB).<sup>143</sup> These are RTB protocols which Google uses to send bid requests to Authorized Buyers (i.e. ad buyers integrated with AdX).

Importantly, Google passes on in the bid request (be it to Authorized Buyers or Open Bidders) the Google User ID, a buyer-specific user ID which identifies the user e.g., 123. This ID is derived from Google's doubleclick.net cookie. However, as each ad tech vendor identifies users with a different ID (e.g., the same user is identified by Google as '123' but as 'abc' by ad exchange X), it is necessary for them to map each other's IDs. Google offers for this purpose, *inter alia*, a Cookie Matching service to Open Bidders and Authorized Buyers.<sup>144</sup> As part of the Cookie Matching service, an Open Bidder may match the Google User ID provided in the bid request with its own ID for the same user (so that it knows e.g., that user '123' in Google's "language" equals user 'abc' in its own "language"). Once that is done, the Open Bidder may identify the particular user each time it receives a Google User ID – and of course create a detailed profile of the user simply by "listening to the bidstream". If Google considers that such data sharing is legal under the GDPR and/or other applicable data protection legislation (e.g., because the user has granted valid consent to profiling for advertising purposes, Google contractually prohibits vendors to use Cookie Matching to engage in data harvesting,<sup>145</sup> etc.), there is no reason to believe the same cannot apply within the context of client-side or another server-side header bidding solution.<sup>146</sup>

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<sup>143</sup> How Open Bidding Works, available at <https://support.google.com/admanager/answer/7128958>, last accessed on 19 May 2020.

<sup>144</sup> <https://developers.google.com/authorized-buyers/rtb/open-bidding#cookie-matching>, last accessed on 19 May 2020; <https://developers.google.com/authorized-buyers/rtb/cookie-guide#how-it-works>, last accessed on 19 May 2020.

<sup>145</sup> See <https://developers.google.com/authorized-buyers/rtb/cookie-guide#respects-user-privacy>: "*The purpose of the match table is to allow buyers to use the information they own about the user in transacting with Google. The use of the Cookie Matching Service for the purpose of data harvesting is strictly prohibited by the Authorized Buyers contract and policies.*" We assume similar restrictions apply to Open Bidders.

<sup>146</sup> To be clear, we do not argue that Google should restrict the data it shares in bid requests, considering the consequences this could have. For instance, if Google no longer shares the Google User ID in the name of user privacy then open RTB risks crumbling, as ad buyers will not be able to identify the user, which is crucial for purposes such as targeting, frequency capping and attribution. Google could thus invoke privacy (either as a pretext or under pressure from Data Protection Authorities) to build a closed end-to-end ad tech ecosystem, whereby the User ID would be shared only within its walls: from GAM to DV360/Google Ads and no other bidder. That would advantage greatly DV360 and Google Ads in any auction run by GAM, as no one else would be able to identify the user. We wonder whether this extreme scenario is something desirable, given its potential for concentration. One could say that privacy is best served when no external data sharing takes place. Yet, on the other hand, we are deeply concerned about vast troves of data being concentrated in the hands of powerful tech companies, with no visibility into how such data may be used. As the UK's Information Commissioner's Office has observed, "*the concentration of data in the hands of large businesses can become a threat to individuals' data protection rights*"<sup>146</sup>. See [https://assets.publishing.service.gov.uk/media/5e8c8510e90e07076f0ad7b5/200212\\_ICO\\_response\\_to\\_interim\\_report.pdf](https://assets.publishing.service.gov.uk/media/5e8c8510e90e07076f0ad7b5/200212_ICO_response_to_interim_report.pdf), paragraph 6. This is also why the most sensible approach is to find a balance between upholding user privacy without stifling competition – and this is something most Data Protection



True, in the case of Open Bidding Google is the “gatekeeper” and may decide to stop sharing IDs with a particular vendor which is suspected to engage in malicious conduct. But that is something possible in other server-side header bidding solutions. But in the case of Open Bidding, Google may simply pick winners and losers by sharing IDs and facilitating cookie matching with certain vendors over others (given that the vendor’s ability to bid high for an impression depends to a large extent on its ability to identify the user). Suffice it to say that in Open Bidding Google always “listens to the bidstream” itself, but that does not seem to be a concern to Google.

In fact, the only limitation in the data shared as part of bid requests sent by Google that we are aware of is the removal of contextual content categories announced in November 2019, referred to by the authors of the Google Report later on.<sup>147</sup> As we explain below when discussing the new Bid Data Transfer file, this policy change probably had a minimal impact on privacy.

In conclusion, we think Google’s concerns over header bidding are either irrelevant (engineering costs) or grossly overstated (page latency; reporting discrepancies) or apply to its own products as well (data leakage). In any event, Google could have always opted to join a server-side header bidding solution *not offered by itself*, but it has not done so. Google’s refusal to participate in any header bidding solution not organized by itself is problematic as it shields its ad serving business from competition and raises switching costs for its customers, as discussed above.<sup>148</sup>

## 5. The issue of advertiser self-competition

The issue of advertiser self-competition is raised throughout the Google Report. It is brought up as another example (along with page latency) where Google carefully balances the interests of the various stakeholders in order to ensure the long-term viability of the ecosystem.

The issue of advertiser self-competition is first raised with regards to header bidding. The authors of the Report argue that header bidding created inefficiencies, in that it developed multiple paths to the same impression, which may result in advertisers bidding against themselves (without realizing it):

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Authorities likely have in mind. The Transparency and Consent Framework developed under the aegis of IAB (with version 2.0 rolling out officially in late summer 2020) is the industry’s current attempt to ensure RTB’s compliance with the GDPR. Google is supposed to integrate with v.2.0 later this year. Securing regulatory clearance from Data Protection Authorities will be key in preserving RTB without creating data concentration.

<sup>147</sup> See Google Report, page 31.

<sup>148</sup> See *supra* pages 31-32.

“[...] header bidding introduced an auction of auctions, which created potential inefficiencies by developing multiple paths to the same ad impression. In particular, auctions of auctions increase the risk that bid prices are inflated because advertisers may unknowingly compete against themselves for the same ad impression by participating in different exchanges competing in the same header bidding auction.

[...] While such increased self-competition could in the short-term drive up the price for publishers, it could ultimately have an adverse impact on the overall ecosystem by hurting advertisers’ trust in ad auctions.”<sup>149</sup>

To support this view, the authors refer to The Trade Desk’s recent decision to ask its partner exchanges to “*stop sending duplicative bid requests for the same ad impression*”.<sup>150</sup>

The authors’ theory is just wrong for several reasons. First, as a preliminary remark we note that the issue of advertiser self-competition – assuming it is a *real* issue in practice – is, as the authors acknowledge, a result of multi-homing.<sup>151</sup> And there are valid reasons why e.g., an advertiser may wish to multi-home and use several DSPs, for instance, in order to increase the probability of winning (as in some cases DSPs may fail to bid within the time-limit set by the ad exchange or may fail to identify the user).

Second, the issue of self-competition is nothing new; it exists already at the level of a single exchange, where multiple DSPs bid for the same impression, as the authors again admit in a footnote.<sup>152</sup> Indeed, the auction run by an exchange can be very well described as “*an auction of auctions*” (a term the authors use to describe header bidding), as the ad exchange “*runs an auction among tools that themselves run auctions*”, namely ad buyers. The authors note repeatedly that ad buyers often first run an internal auction-like process among advertisers on their platform.<sup>153</sup> It is thus hard to understand why the authors seem to be concerned with the risk of self-competition only as it concerns header bidding, while the same remarks applies to all forms of auctions of auctions.

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<sup>149</sup> Google Report, pages 18-19 (internal citation omitted). The argument is repeated in page 26.

<sup>150</sup> Google Report, page 19 (internal citation omitted).

<sup>151</sup> Google Report, page 19: “*That is especially so because many publishers and advertisers multi-home across different exchanges and DSPs, which means that a lot of the same ad impressions and ad demand are going to be present on multiple exchanges.*”

<sup>152</sup> Google Report, page 19, footnote 58.

<sup>153</sup> See Google Report, page 7 and page 50. Note that the auction organized by an ad exchange may very well be described as an “*auction-like process*”, as the term is used by the authors. The reason is that the ad exchange (e.g., AdX) may run its “*auction*” but eventually not win the impression because the ad server picks another winner (e.g., a guaranteed line item representing a direct deal whose temporary CPM under Enhanced Dynamic Allocation AdX failed to beat).

Third, we find it odd that the authors keep raising this argument about self-competition but provide no data to show it is actually a problem in practice. As we observed above, the authors represent Google in multiple jurisdictions; they must have had access to data. Yet they do not even provide an estimate of, for example, how often advertisers bid against themselves in auctions run by Google (both in a second-price and a first-price world), or how much they may end up overpaying. The question is not whether a risk *exists*; rather, the question is whether such risk is *material*. The lack of any empirical data put forward by the authors may mean that in practice the issue of self-competition is much less significant than what the authors suggest. For instance, in a 2017 paper PubMatic observed that the risk of self-competition due to header bidding is actually extremely low:

“Many buyers believe that there is risk in bidding against themselves during header bidding auctions. However, based on analysis of the auctions hosted within PubMatic’s OpenWrap wrapper, the percent of time a single DSP is both the highest and second highest bidder is less than 0.10% (one-tenth of one percent).”<sup>154</sup>

The analysis was based on a sample of 400 million OpenWrap auctions. PubMatic noted that it has controls in place “*to prevent DSPs from bidding against themselves, so the count only represents a potential value, not an actual value.*”<sup>155</sup>

Fourth, the authors’ reference to The Trade Desk is at best misplaced and at worst misleading, as made clear by the very article they cite.<sup>156</sup> What The Trade Desk recently did is to ask its partners (ad exchanges) to cut down bid duplication by making inventory available through only *one* header bidding solution (either Prebid or TAM or Open Bidding) so that it may see each impression once per exchange. The Trade Desk’s action did *not* therefore seek to address the risk of self-competition (that issue is not even mentioned in the article the authors quote), but aimed at lowering infrastructure costs as the existence of multiple integrations increases the “Queries Per-Second” (QPS) the DSP receives, which in turn translates to higher operational costs.<sup>157</sup> The increase in Internet traffic during the Covid-19 pandemic placed an additional operational burden on DSPs such as The Trade Desk, as explained in the article:

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<sup>154</sup> PubMatic, “Understanding Auction Dynamics A Primer”, 2017, available at <https://pubmatic.com/wp-content/uploads/2017/08/PubMatic-UnderstandingAuctionDynamics.pdf>, page 12.

<sup>155</sup> *Id.*, page 14.

<sup>156</sup> Sarah Sluis, “The Trade Desk Suppresses Bid Duplication Amid COVID-19 Traffic Surge”, *AdExchanger*, 21 April 2020, available at <https://www.adexchanger.com/platforms/the-trade-desk-suppresses-bid-duplication-amid-covid-19-traffic-surge/>.

<sup>157</sup> Ronan Shields, “The Trade Desk Asks SSPs for a Single Supply Path to Publisher Inventory”, *AdWeek*, 21 April 2020, available at <https://www.adweek.com/programmatic/the-trade-desk-asks-ssps-for-a-single-supply-path-to-publisher-inventory/>.

“The idea of cutting down on bid duplication predates the coronavirus pandemic. But the extra traffic has added millions in server costs, a burden shouldered largely by DSPs, as well as the agencies and marketers who pay for this cost as part of the ad tech tax. So there’s an extra economic incentive to cut out bid duplication now, and fast.”<sup>158</sup>

In other words, The Trade Desk did not take issue with publishers using header bidding out of any concern around self-competition; it took issue with publishers using *multiple* header bidding solutions for the same inventory, which results in additional operational costs for DSPs due to the increase in QPS.

Fifth, if Google were truly concerned about the issue of advertiser-self competition, we find it hard to understand why it decided to launch its own version of server-side header bidding. By launching Open Bidding, whereby publishers may call up to *twenty* exchanges, Google may have only made *worse* the very problem it takes issue with, namely advertiser self-competition.

Sixth, it is not clear what Google has done to address the issue of self-competition within Open Bidding. Since Google considers it has the duty to strike the right balance between the various stakeholders of the ecosystem, we would like to know how Open Bidding addresses this problem. Unsurprisingly, the authors stay silent on this point. They only state that Google has taken steps to mitigate self-competition within the context of its switch to a Unified Auction, yet the language they use is worth being quoted for the caveats it includes:

“As discussed above and below, in transitioning Ad Manager to a unified first-price auction, Google also took steps to try to mitigate some of the risks of adverse effects from potential advertiser self-competition”.<sup>159</sup>

Apparently one of the steps Google took to “*try to mitigate some of the risks of adverse effects from potential advertiser self-competition*” was to prevent publishers from setting buyer-specific floors. We discuss the issue of buyer-specific floors (and explain why the authors’ position is wrong) below in Section C.

Seventh, were Google truly concerned about advertiser self-competition, it could join (or launch itself) an industry-wide initiative (e.g., under the aegis of IAB) to agree on standardized transaction/impression IDs, namely IDs that would identify an impression in a common manner across the programmatic ecosystem. That would enable e.g., DSP 1 to identify that it is bidding for the same impression on Ad Exchange X and Ad Exchange Y, and modify its bidding strategy accordingly. The risk of self-competition arises from the fact that DSPs may not be

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<sup>158</sup> Sarah Sluis, “The Trade Desk Suppresses Bid Duplication Amid COVID-19 Traffic Surge”, *supra* footnote 156.

<sup>159</sup> Google Report, page 26 (emphasis added).

able to determine they are bidding for the same impression through different supply paths, as the authors acknowledge:

“[...] with the growing publisher use of auction of auctions solutions like header bidding, a single ad impression will be auctioned through multiple different exchanges at the same time. But it is difficult for advertisers and their ad buyers (e.g. DSPs or ad networks) to determine whether they are bidding on different or the same impression in different ad exchanges. That means there is increasing risk that advertisers bidding for an impression unknowingly bid against themselves.”<sup>160</sup>

We are thus surprised that the authors do not even consider the alternative of Google helping address the root of the problem of advertiser self-competition (assuming it is a real problem in practice) by agreeing on a standardized impression ID common across the ecosystem. That would of course require collaboration with the wider industry. In addition, such an approach would be a huge step in the direction of more transparency (including fee transparency). The CMA in its Interim Report indeed considers that having consistent transaction IDs could be a potential remedy to improve transparency.<sup>161</sup> In their replies to the CMA Interim Report, both The Guardian and research equity firm Arete Research explained the benefits of having a common transaction ID.<sup>162</sup><sup>163</sup> The need to agree on standardized data formats across the programmatic ecosystem was also a critical conclusion of the recent ISBA study.<sup>164</sup>

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<sup>160</sup> Google Report, page 33 (emphasis added).

<sup>161</sup> CMA Interim Report, paragraph 6.178.

<sup>162</sup> Guardian Media Group response to CMA interim report on the UK digital advertising market, available at [https://assets.publishing.service.gov.uk/media/5e8c8b54e90e070777bd56f4/Guardian\\_Media\\_Group.pdf](https://assets.publishing.service.gov.uk/media/5e8c8b54e90e070777bd56f4/Guardian_Media_Group.pdf), page 11: “*The use of common market data would enable publishers, advertisers and regulators to use that data for the purpose of audit, analysis and vendor performance management. Ensuring that such data is made available to advertisers and publishers by all parties in the value chain – whether dominant or nascent – would align the incentives of market actors, creating competition, accountability and innovation, creating a healthier more diverse digital economy to the ultimate benefit of UK consumers.*”

<sup>163</sup> Richard Kramer, “CMA Online Platforms Review: Arete Research's Response”, *Arete Research*, 17 February 2020, available at [https://assets.publishing.service.gov.uk/media/5e8c5fb1d3bf7f1fafa7c8eb/200217-Arete\\_Research\\_Response\\_to\\_Interim\\_Report-.pdf](https://assets.publishing.service.gov.uk/media/5e8c5fb1d3bf7f1fafa7c8eb/200217-Arete_Research_Response_to_Interim_Report-.pdf), page 2: “*There could also be a requirement that the exchange function (in the case of Google, its AdX business) is run in a way which is transparent to all parties, again, following financial markets examples. There is a compelling case for transparent reporting of fees along the entire ad tech chain, with advertisers given a clear view of what they bought (inventory, audience), what they paid (which ad-tech partner received which fees) and what was received by publishers whose inventory was sold. Transaction IDs would be a good start; these currently exist in multiple, non-comparable formats.*”

<sup>164</sup> See ISBA Programmatic Supply Chain Transparency Study, *supra* footnote 63. The study was carried out by PwC with the aim of documenting the various fees charged along the supply chain and calculating the actual percentage of ad spend that reaches working media. It is the first end-to-end supply chain study, with previous studies focusing only on parts of the supply chain. PwC collected data from 15 advertisers, 12 ad agencies, five DSPs (including DV360 but not Google Ads), six SSPs (including Google Ad Manager) and 12 publishers. Quite astonishingly, from a total of 267 million impressions served by study

Yet we can already see Google resisting any effort to increase supply chain transparency with the help of transaction IDs. In its response to the CMA Interim Report, Google states it “*support[s] measures to improve transparency in open display*”,<sup>165</sup> but argues against the adoption of common transaction IDs for privacy reasons:

“Imposing consistent transaction IDs raises potential privacy concerns by allowing advertisers to join Google’s secure bid data with other information in a way that would allow individual users to be identified. It would also allow various market participants along the intermediation chain to ‘pool’ user data without user consent.”<sup>166</sup>

We can expect the same argument to be raised with regard to impression IDs in order to address the issue of self-competition. However, that should not be the end of the discussion. We think regulators would welcome proposals to address Google’s privacy concerns, assuming these are genuine and not pretextual. After all, the perfect privacy model Google seems to have in mind is not sharing any data and raising its walls so that data remains inside them, while outside players (e.g., advertisers, publishers) would have to satisfy themselves with what Google tells them *about* the data. This is obviously at odds with any industry effort to increase transparency, including fee transparency. We are confident regulators will take a sensible approach in order to increase transparency while safeguarding user privacy.

### C. The authors’ criticism of our concerns about Google’s conducts in ad tech

In this Section, we address the authors’ criticisms of our concerns line-by-line, exposing their flaws and inaccuracies. We first address the authors’ argument that Dynamic Allocation increased efficiency and competition (sub-section 1). We then order the problems of Open Bidding (sub-section 2). Next, we discuss in detail the authors’ arguments with regard to Google’s switch to a Unified Auction (sub-section 3) before examining the authors’ position

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advertisers to study publishers, only 12% (31 million) were successfully matched. The rest could not be matched “*due to low data quality*” (page 6). The study noted how “[a] *lack of uniformity across the supply chain on whether data is stored on a log level or aggregated basis led to a number of problems in data matching. Inconsistencies across parties in data formatting (names, currency, device type etc) further increased these challenges*” (page 7). One of the critical conclusions of the study was thus that “[s]tandardisation is *urgently required across a range of contractual and technology areas, to facilitate data sharing and drive transparency*” (page 11). Another astonishing finding of this study is that one third of supply chain costs, or 15% of the ad spend, could not be attributed to any particular factor. This “unknown delta” averaged 15% of advertiser spend, ranging from 0% to 86% (!), with the majority from 2% to 23% (page 10).

<sup>165</sup> Google, Online Platforms and Digital Advertising Comments on the Market Study Interim Report, *supra* footnote 72, paragraph 98.

<sup>166</sup> *Id.*, paragraph 100.

that Google does not charge monopolistic rents (sub-section 4). We have already addressed the authors' attempts to portray the ad tech space as "crowded" and "competitive" in **Part II**.

### 1. Dynamic Allocation distorted competition

The authors first address our concern that Google has leveraged its dominance in the ad serving market to the ad intermediation market by favoring its ad exchange. According to the authors, we claim that

"Google developed the Dynamic Allocation feature in Ad Manager to 'favor its own intermediation service [AdX] over its rivals' by giving AdX a 'so-called 'last look' advantage over every impression, i.e., the possibility to outbid at will its rivals *after* they had submitted their bids.'"<sup>167</sup>

As a preliminary remark, we note that this is not what we claimed. We never said that Google developed Dynamic Allocation to give AdX a "last look". As made clear in our second major ad tech paper, we claim that Dynamic Allocation resulted in AdX having "last look" once publishers started using header bidding.<sup>168</sup>

The authors then challenge us on the basis of the following arguments. In the first place, they argue that Dynamic Allocation was a procompetitive innovation and not an anti-competitive product design. The authors even cite the CMA as confirming that

"Dynamic Allocation solved for an inefficiency in the then-existing waterfall process in the ad server by which publishers sought to grow ad sales."<sup>169</sup>

It is somewhat ironic that the authors cite the CMA, considering that the latter observed that Dynamic Allocation solved only part of the efficiency problem associated the waterfall, and only for AdX:

"With the introduction of real-time bidding, the traditional way in which publisher ad servers worked became inefficient. SSPs continued to be ranked in a waterfall-like sequence within the ad server. [...]"

However, this waterfall setup was inefficient and led to sub-optimal yield. The reason is that the ad server did not allow publishers to rank SSP partners in the waterfall in accordance with the actual bid (expressed in cost per thousand impressions, or 'cost

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<sup>167</sup> Google Report, page 23 (internal citation omitted).

<sup>168</sup> Damien Geradin and Dimitrios Katsifis, Trust me I'm fair, *supra* footnote 3, page 19: "[h]owever, the existence of Dynamic Allocation results in AdX having the "last look" over header bidding, in that it may take the winning header bidding bid and outbid it by paying just one penny more". See also page 36.

<sup>169</sup> Google Report, page 24 (internal citation omitted).

per mille' (CPM) ) they would submit. Instead, SSPs were ranked according to their estimated bids (expressed in CPM), ie the bids the publisher expected them to submit once called by the ad server. [...]

As a way to partially address this inefficiency, the ad server DoubleClick for Publishers (DFP), which was acquired by Google in 2008, introduced Dynamic Allocation. [...] In this way, AdX was the only SSP able to insert its real-time demand within DFP. While all other SSPs were stuck with their estimated demand, AdX was able to compete against them and secure impressions on the basis of its real-time demand. [...]

Dynamic Allocation did not completely solve the inefficiencies inherent in the 'waterfall' system; moreover, it gave AdX an advantage that other SSPs considered unfair."<sup>170</sup>

This is precisely what we argued before the CMA issued its Interim Report. Dynamic Allocation gave AdX an advantage over all other exchanges which were stuck in the waterfall with their "estimated" demand. AdX was the only ad exchange able to insert its real-time demand and it could cherry-pick impressions at will and at a lower price, as explained above. While Dynamic Allocation may have had positive effects to the extent publishers sold their remnant inventory to *ad networks* on a *fixed, upfront-negotiated* price, that did no longer apply once publishers started selling remnant inventory to *ad exchanges* that could return a real-time bid. In this case, Dynamic Allocation may have well led to allocative inefficiencies, with AdX cream skimming by cherry-picking high-value impressions at will and publishers generating less revenue compared to the counterfactual. The authors do not address any of these concerns, instead limiting themselves to the benefits Dynamic Allocation brought to AdX (and AdX buyers), as if it were the only ad exchange in the marketplace. This is also because the authors fail to distinguish between the different effects of Dynamic Allocation depending on whether the publisher would sell inventory to an ad network on a fixed upfront-agreed price or to an ad exchanges which would return a real-time bid.

In the second place, the authors argue that we are wrong, in that

“when Dynamic Allocation was launched, the floor price for AdX was booked by the publisher, typically based on estimates of what price a publisher could get for an impression absent the auction, not on the bids of competing ad networks or ad exchanges for that impression.”<sup>171</sup>

To support their view, the authors cite Google's 2010 White Paper on Dynamic Allocation. The authors' argument makes little sense, as they fail to distinguish between the period *before* publishers started using header bidding and the period *after* they started using header bidding.

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<sup>170</sup> CMA Interim Report, Appendix H, paragraphs 13-16 (emphasis added).

<sup>171</sup> Google Report, pages 24-25 (internal citation omitted).



Before header bidding emerged, the publisher would book remnant line items in the ad server that corresponded to its remnant demand partners (ad networks; ad exchanges). The line items were ranked according to the CPM the publisher would insert. That would be either a *fixed* CPM the publisher had agreed on with its partner or an *estimate* of the CPM the partner would return if called. Within the context of Dynamic Allocation (and assuming no guaranteed line items were eligible to serve), DFP would scan all eligible remnant line items and select the one with the highest CPM. It would then send that CPM to AdX as the “price to beat”, i.e. as a price floor. Both the authors and the CMA accept that.<sup>172</sup>

However, things changed once publishers resorted to header bidding. As noted above, header bidding was invented as a “hack” allowing an auction to take place before the ad server is called. But header bidding is of no use if the result thereof cannot be inserted in the ad server, which is the ultimate decision-maker when it comes to ad selection. Publishers thus had to find a way to insert the bids from header bidding “inside” DFP, despite the fact that DFP had no integration with header bidding. The way they did so was the following: first, the publisher would use key-value pairs which exist in the webpage to capture the bids submitted by the header bidding partners. These key-value pairs were then included in the ad request to DFP. In other words, once DFP was called, it would receive these key-value pairs representing the bids from header bidding demand partners. The bidding signals were thus observable “inside” DFP. Now, publishers also needed a way to instruct DFP to make use of these bidding signals when deciding what ad to serve. For that purpose, the publisher would create within DFP remnant line items for each header bidding demand partner. What is more, in order to capture *all* the possible bids returned by the header bidding demand partner, publishers would create *hundreds* of line items for each partner in small price increments (e.g., a first line item would be \$ 0.10, a second line item would be \$ 0.11 and so on until e.g., \$ 2.00). Once the key-value pairs were received by DFP, the remnant line items to which they corresponded would “light”. Assume the highest bid from header bidding was a bid from Rubicon Project at \$ 2.00. A corresponding line item for Rubicon Project at \$ 2.00 would then be activated, so that DFP would select it to serve the ad.

However, as a result of Dynamic Allocation, DFP would select the eligible remnant line item with the highest CPM (here the line item for Rubicon Project at \$ 2.00) and then send a request to AdX with *this* CPM as its price floor. AdX would run its own auction and if it could return a slightly higher bid (e.g., \$ 2.10), it would secure the impression and Rubicon Project would lose. This is the infamous “last look”, as AdX would run its auction after the exchanges participating in header bidding and could outbid them at will. This is also why, once publishers started to use header bidding, the price floor for AdX would typically correspond to the highest bid from header bidding. The authors’ reference to Google’s 2010 White Paper on Dynamic

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<sup>172</sup> CMA Interim Report, Appendix H, paragraph 15.

Allocation is totally irrelevant, as it was written *before* header bidding emerged. Our description above has been confirmed by the CMA.<sup>173</sup>

In the third place, the authors argue that contrary to our assertions,

“it was the ad buyers competing in the AdX auction (not just AdX) that received price floor information. And, there were and are many ad buyers bidding on AdX, including Google’s ad buyers, Google Ads and DV360, but also many competing ad buyers (i.e. third-party DSPs, ad networks or agency trading desks). So it would be risky for any such ad buyer to bid just “a penny above the floor,” as G&K theorize, because it could well then lose to another ad buyer bidding more.”<sup>174</sup>

Again, this does not challenge our views. First, we never said the price floor was communicated only to AdX and not its ad buyers. We said that DFP would send the CPM of the top remnant line item as a price floor to AdX.<sup>175</sup> Second, the argument that “*it would be risky for any such ad buyer to bid just a ‘penny above the floor’*” is naïve. In a second-price auction, if an ad buyer is the only one to exceed the floor then it ends up paying just a penny above the floor, regardless of the amount it bid. So the authors’ argument is simply wrong. If Google wished to counter our view, it could very well provide information on the number / percentage of times Google Ads would win an impression slightly above the header bidding winning bid (with “slightly” being appropriately defined as e.g., a difference of \$ 0.01- \$ 0.10). That would also enable regulators to gauge the impact of Google’s “last look”.

In the fourth place, the authors argue that Dynamic Allocation was launched by DoubleClick in 2007, before its acquisition from Google and “*almost a decade before header bidding.*” As a result,

“any claims that Dynamic Allocation was the result of Google’s acquisition of DoubleClick or that it was designed to hinder header bidding are chronologically backwards.”<sup>176</sup>

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<sup>173</sup> CMA Interim Report, Appendix H, paragraph 19: “*When an impression is available, the user’s browser calls first the publisher’s SSP partners, which submit their bids to the header bidding auction. The browser then contacts DFP. Within DFP, the bids of the SSP partners are matched with price priority line items. Until the recent transition to a Unified Auction (discussed below), as a result of Dynamic Allocation DFP selected the line item with the highest price (which in that case corresponds to the highest bid from the header bidding auction) and then sent a bid request to AdX with it as its price floor.*”

<sup>174</sup> Google Report, page 25.

<sup>175</sup> See e.g., Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, page 36: “*each time an impression was available, DFP would “scan” all the eligible remnant line items (corresponding to exchanges in the waterfall) and select the one with the highest CPM. DFP would then send a bid request to AdX with that CPM as its price floor.*”

<sup>176</sup> Google Report, page 25.

Once more the authors have not paid attention to our arguments. First, in our second major ad tech paper published in January 2020 we noted the following:

“In the first paper, we stated at page 78 that Dynamic Allocation was launched in 2014. This statement was based on articles referring to Dynamic Allocation as being launched in 2014. Since then, we found that Dynamic Allocation has been a DFP feature at least since Google launched AdX in late 2009.”<sup>177</sup>

We now learn from the authors that Dynamic Allocation was launched by DoubleClick in 2007. That plays little role. First, even if Dynamic Allocation was launched in 2007, we doubt that it was widely deployed until at least late 2009. The reason is that in 2007 the DoubleClick Ad Exchange was not fully commercialized, as noted by the European Commission at the time.<sup>178</sup> After the acquisition closed, Google eventually launched AdX in late 2009, when it also referred to Dynamic Allocation in an interview with *AdExchanger*.<sup>179</sup> Therefore, it is highly unlikely that this feature had any traction before that date.<sup>180</sup> After all, for this to happen AdX needed to have a strong pool of demand, which we guess did not happen before Google Ads (then “AdWords”) was integrated into AdX (which happened after the acquisition).<sup>181</sup>

Second, we never argued that Dynamic Allocation was *designed* to hinder header bidding, as the authors incorrectly assert. Quite the contrary, we have made it clear that header bidding emerged precisely as a *response* to the inequity of Dynamic Allocation and to make up for DFP’s inefficiency, whereby every exchange other than AdX was stuck in the waterfall with estimated demand. The authors should read our papers more carefully.

What then happened was that the existence of Dynamic Allocation in combination with header bidding resulted in AdX having the “last look”, as explained above. The authors even acknowledge that:

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<sup>177</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, page 18, footnote 28.

<sup>178</sup> See *supra* footnote 112.

<sup>179</sup> Google's DoubleClick Ad Exchange Is Officially Launched Says VP Neal Mohan, *supra* footnote 113.

<sup>180</sup> See also Dina Srinivasan, *supra* footnote 32, page 41, footnote 158, noting that according to a former DoubleClick employee, “DoubleClick had developed plans for an exchange to spur acquisition interests and that such acquisition interest did follow New York Times coverage of DoubleClick’s exchange plans. Based on this person’s account, DoubleClick specifically pitched the sale of the DoubleClick ad server as something that a firm in the intermediary trading market could leverage and that Google executive Neal Mohan had a spreadsheet that specifically modeled rent extractions through such leveraging during merger negotiations. Note, that narrative may counter the FTC’s assessment of the merger and its conclusion that Google would not be able to leverage the DoubleClick ad server to preference itself in the ad trading intermediation market.”

<sup>181</sup> Google's DoubleClick Ad Exchange Is Officially Launched Says VP Neal Mohan, *supra* footnote 113.

“To the extent Dynamic Allocation led to opportunities for AdX buyers to outbid header bidding auction bids, that only happened nearly ten years *after* the invention of Dynamic Allocation. It resulted from the emergence of header bidding and how publishers used header bidding in conjunction with Google’s Ad Manager, not any anticompetitive design of Dynamic Allocation almost a decade earlier. As the CMA observed in its Interim Report, what G&K call a so-called last look, ‘was not intentionally designed to give AdX an advantage when competing against header bidding; it was simply the result of the header bidding auction taking place before the AdX auction was able to run.’”<sup>182</sup>

It should be nonetheless recalled that even before the emergence of header bidding Dynamic Allocation was problematic, as it enabled only AdX (to the exclusion of other ad exchanges) to compete on the basis of its real-time demand, while also allowing AdX to cream skim by cherry-picking inventory.

In any event, this is the first time Google admits publicly that it had “last look” over header bidding. The fact that “*Dynamic Allocation was not intentionally designed to give AdX an advantage when competing against header bidding*” (of course it was not, since header bidding emerged as a response to Dynamic Allocation) is of no relevance as competition law does not require anti-competitive intent. Rather, the existence of “last look” illustrates the inefficient way in which DFP functioned and Google’s refusal to solve such inefficiency for anyone else but for itself, which in turn resulted in publishers and rival exchanges devising a hack around DFP’s waterfall. And, to the extent “last look” resulted in AdX winning impressions over header bidding demand partners (and depriving them of associated revenue), it could have very well had exclusionary effects. None of the above is considered by the authors.

In the fifth place the authors argue there is no evidence that Dynamic Allocation had any exclusionary effects.<sup>183</sup> We have already discussed the negative effects of Dynamic Allocation. Other than that, we are not vested with the investigative powers required to establish a causal link between Google’s conduct and its significant increase in market share, nor is it our job to do so. However, regulators may very well do so.

In any event, we remind that according to the case law of the CJEU, for the purposes of establishing a breach of Article 102 TFEU it suffices to demonstrate that the abusive conduct tends to restrict competition, that is to say that the conduct is capable of having, or likely to have, such an effect.<sup>184</sup> The dominant firm’s practice must have an anticompetitive effect in the market, but the effect does not necessarily have to be concrete, and it is sufficient to

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<sup>182</sup> Google Report, page 25 (internal citation omitted).

<sup>183</sup> Google Report, page 25: “*there is no evidence that we can see that Dynamic Allocation has had any exclusionary effects on competitors (much less harm to competition as a whole)*”.

<sup>184</sup> Case T-219/99 *British Airways plc vs. Commission of the European Communities*, paragraph 293; Case T-301/04 *Clearstream v Commission*, [2009] ECR II-03155 paragraph 144.

demonstrate that there is an anticompetitive effect which may potentially exclude competitors from the market who are at least as efficient as the dominant undertaking.<sup>185</sup> The Court of Justice has also held that “*the fact that the desired result, namely the exclusion of those competitors, is not ultimately achieved does not alter its categorisation as abuse within the meaning of Article 102 TFEU.*”<sup>186</sup>

## 2. Open Bidding is everything but open

Next, the authors contend that Open Bidding created an alternative to and solved drawbacks of header bidding. They repeat that in light of its task to balance the interests of users, advertisers and publishers, Google had good reasons not to launch an “*auction of auctions*” solution like header bidding, given its “*inherent inefficiencies and drawbacks.*”<sup>187</sup> As we explained above, Google’s concerns over header bidding are overstated. It should also be noted that Google could have very well joined a server-side solution provided by another vendor (e.g., TAM or Prebid Server) but never did so.

Nevertheless, the authors state that Google launched its own server-side bidding solution “*when the industry trended in the direction of such auction of auctions solutions with publisher adoption of header bidding*”, which puts into question any justification put forward not to participate in server-side solutions provided by other vendors. Moreover, as we noted above, Google’s Open Bidding may actually exacerbate the issue of self-competition (assuming it is a real problem in practice), while it is not clear how it addresses data leakage. If anything, Open Bidding appears to have created an even more complicated ecosystem, as the authors themselves admit.<sup>188</sup>

Furthermore, the authors conveniently overlook two important points.

First, Google’s refusal to participate in any header bidding solution (be it client-side or server-side) not provided by itself protects DFP’s dominance in the ad serving market, as it creates switching costs for customers. If a publisher switches ad server, there is no way to have AdX – and its valuable pool of Google Ads demand, given that Google Ads purchases inventory *overwhelmingly* from AdX, as confirmed by the CMA<sup>189</sup> – compete in real-time against other

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<sup>185</sup> Case C-52/09 *Konkurrensverket v. TeliaSonera*, [2011] ECR I-527, paragraph 64.

<sup>186</sup> *Id.*, paragraph 65.

<sup>187</sup> Google Report, page 26.

<sup>188</sup> Google Report, page 20: “[w]hile Open Bidding enabled publishers to have bids from AdX buyers and third-party exchanges compete, without some of the problems of header bidding, it also created complexity in Ad Manager.”

<sup>189</sup> See *supra* footnote 93.

exchanges. Instead, AdX will be stuck in the waterfall and publishers will lose programmatic revenue. No sensible publisher would do that. This was recognized by the CMA, as explained above when debunking the myth of Google fostering interoperability.<sup>190</sup>

We can thus see how Google’s practice of linking its various products reinforces its position across the ad tech stack and raises switching costs. By linking Google Ads to AdX, Google makes AdX a must-have product for publishers. In turn, by linking AdX to DFP in the way described above, it locks customers into DFP, and prevents the emergence of credible competitors in ad serving. In turn, DFP’s pivotal role in the ad selection process can be used to favor e.g., AdX or Google Ads, and the “virtuous cycle” continues. This is an “efficient” way to foreclose competition across the various elements of the value chain. We wonder how this may be reconciled with the authors’ statement that Google fosters interoperability and head to head competition with its ad tech products.

As the CMA observed,

“[...] linking Google Ads demand – where Google may be able to extract a significant rent – with the publisher ad server may provide Google with a greater incentive to foreclose rival providers along the intermediation chain.

First, this link may allow Google to soften rivals’ ability to compete. Google could implement such a strategy by credibly committing to price aggressively on the ad serving market, leading to the exit of competitors or depriving them of economies of scale. In this regard, we have been told that Google has implemented a very aggressive sales strategy for its publisher ad server, charging very low prices for ad serving and, in some cases, offering guaranteed media spend to publishers signing up to Google Ad Manager. We will explore these concerns in the second part of the study.

Second, Google has an incentive to degrade the quality of rival providers, by favouring its own intermediation services, so that rivals are less attractive to publishers, making a foreclosure strategy less expensive to implement. In the following paragraphs, we

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<sup>190</sup> See *supra* page 31, referring to CMA Interim Report, paragraph 5.214. See also CMA Interim Report, paragraph 5.215 where it is explained that “[w]hile other publisher ad servers may provide a technical solution to integrate AdX demand, this is not as efficient as header bidding and presents several limitations. An ad server provider told us that the only way publishers using its ad server can benefit from Google Ads demand is to first run an auction of all non-Google demand and, then, to dynamically call an ad unit in Google Ad Manager, setting a floor price equal to or higher than the price returned from the auction for all non-Google demand. Google will then run its own auction. This process is highly inefficient. The main issue is around latency, as the publisher has to wait for two separate auctions to complete in sequence. [...] The process also increases costs, because the publisher has to pay ad serving fees to both the main ad server provider and Google. This system also potentially gives Google a ‘last look’ advantage, as Google knows the winning price of the non-Google demand before it runs its auction. Finally, this is a technically complex set-up that requires significant effort by both the publisher and the ad server provider to implement and maintain.”

explain how Google may have historically favoured, and may still be favouring, its own SSP.”<sup>191</sup>

The authors address none of these points.

Second, the authors do not address Open Bidding’s drawbacks. In particular, Open Bidding suffers from an inherent lack of transparency as a server-side solution. As we have noted above, Open Bidding is an auction organized by Google on its own servers and where it also participates, while collecting the bidding data of its rivals.<sup>192</sup> Server-side solutions are inherently non-transparent, as commentators have observed.<sup>193</sup> The same concern applies to the Unified Auction, which, much like Open Bidding, happens on Google’s servers with Google collecting all the bidding data of its rivals.

In addition, Open Bidding comes with a non-negligible fee for publishers, namely 5%-10% on publisher revenue whenever an impression is won by a non-Google ad exchange. The authors limit themselves to stating that “[j]ust like other providers do for similar solutions (e.g. Amazon, AT&T’s Xandr etc.), Google charges for this service.”<sup>194</sup> The authors do not say of course that Prebid Server is free. Amazon’s TAM is also free for publishers, with a nominal fee (\$ 0.01 CPM) applied to participating bidders.<sup>195</sup>

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<sup>191</sup> CMA Interim Report, paragraph 5.218.

<sup>192</sup> See e.g., Brian LaRue, “Last Stand for Google’s “Last Look:” What’s Next?”, AdMonsters, 31 March 2017, available at <https://www.admonsters.com/last-stand-googles-last-look-whats-next/>, stating that “Demand partners often take pause at jumping into an S2S connection [server-to-server] managed by someone else, especially when that “someone else” is a competitor. In managing the server-side connection, Google ultimately decides what data goes into EBDA [Exchange Bidding]. There are issues in S2S related to ID-syncing between buy and sell sides, and from publisher to publisher. Google might find an advantage for itself in those ID issues, not just because it’s managing the server-side connection, but because of its unparalleled scale. So, EBDA still comes out looking something like a black box, unified auction or no.” See also Lara O’Reily, “Google is Working on a Lucrative New Ad Product, but Some People Who’ve Seen It Think It’s a “Secret Tax” and It “Requires us to Lie””, *Business Insider*, 2 August 2016, available at <https://www.businessinsider.com/ad-tech-view-on-google-ebda-2016-7?r=UK>.

<sup>193</sup> See e.g., Sarah Sluis, “Header Bidding Goes Server-Side: 6 Things You Should Know”, *AdExchanger*, 11 January 2017, available at <https://www.adexchanger.com/ad-exchange-news/header-bidding-goes-server-side-6-things-know/>, stating that “server-side header bidding requires teamwork in a non-transparent environment [...] what happens on the server is invisible to both the publisher and the buyers. It’s possible that auctions could be conducted in a way where one demand partner gets preference or a final look. Or data could be leaked or hidden fees be taken.”

<sup>194</sup> Google Report, page 20.

<sup>195</sup> <https://aps.amazon.com/aps/transparent-ad-marketplace/>, last accessed on 27 May 2020.

### 3. The Unified Auction has not created a “fair” and “transparent” marketplace

We now explain why the authors’ criticism of our analysis of Google’s switch to a Unified Auction fails to convince. We discuss the alleged removal of “last look” (sub-section 3.1) and the “minimum bid to win” feature (sub-section 3.2). We then examine the new Bid Data Transfer file (sub-section 3.3) and the Unified Pricing Rules (sub-section 3.4).

#### 3.1. On the removal of “last look”

The authors criticize us for being skeptical about Google’s removal of “last look” over header bidding as part of its switch to a Unified Auction. We briefly remind the reader why in our second major ad tech paper we were not convinced that Google’s switch to a Unified Auction resulted in the removal of “last look” over header bidding.

First, we noted how “last look” was the result of Dynamic Allocation once publishers started using header bidding. Dynamic Allocation resulted in AdX having the ability to outbid header bidding demand partners *after* these had submitted their bids, hence the name “last look”. Assuming that Dynamic Allocation continued to function after the switch to a Unified Auction in the manner described in Google’s documentation at the time, we wondered how AdX would not have “last look” over header bidding.<sup>196</sup>

Second, we noted the enigmatic language used in Google’s Jason Bigler’s blog post from May 2019, which at the time provided the most “detailed” explanation of the removal of the “last look” advantage. This is the relevant excerpt from Mr. Bigler’s post that we quoted in our paper:<sup>197</sup>

Figure 1: Jason Bigler’s blog post in May 2019 (Source: web archive<sup>198</sup>)

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<sup>196</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, pages 36-37.

<sup>197</sup> *Ibid.*

<sup>198</sup> <https://web.archive.org/web/20190522162422/https://www.blog.google/products/admanager/update-first-price-auctions-google-ad-manager/>, last accessed on 22 May 2020.



After the transition, Ad Manager will have a single auction that compares the prices from a publisher’s guaranteed campaigns with all of a publisher’s non-guaranteed advertising sources — including real-time bidding partners, such as Authorized Buyers and Exchange Bidding partners — and prices from non-guaranteed line items, like those from a publisher’s header bidding implementation. Going forward, no price from any of a publisher’s non-guaranteed advertising sources will be shared with another buyer before they bid in the auction. As has always been the case, all real-time bidding partners integrated with Ad Manager — including Google Ads and Display & Video 360 — will be notified of an auction at the same time.

The use of the dash “ – ” twice in the text made it clear that Google treated non-guaranteed advertising sources as a distinct category from that of non-guaranteed line items. We remind the reader that “non-guaranteed line items” are used by publishers using DFP to implement header bidding. Having noticed that, we observed that Jason Bigler’s statement on the removal of “last look” mentioned only non-guaranteed advertising sources:

“Going forward, no price from any of a publisher’s non-guaranteed advertising sources will be shared with another buyer before they bid in the auction.”

We thus noted how the language used left open the possibility of Google having “last look” over non-guaranteed line items (including header bidding).<sup>199</sup> Whether the result of bad drafting or deliberate vagueness – the blog post was everything but “unambiguous”. This is exactly why we raised the point in our paper, taking issue with Google’s tactic of announcing important product changes through blog posts which leave everyone scratching their heads. For the same reason we did not take comfort in an earlier (March 2019) blog post from Sam Cox, which stated that in the Unified Auction “[a]n advertising buyer’s bid will not be shared with another buyer before the auction or be able to set the price for another buyer.”<sup>200</sup> Jason Bigler’s blog post was published two months later and included more details on Google’s switch. Given its specific character it was natural to attach greater importance to it when interpreting the effects of Google’s switch compared to Sam Cox’s earlier and more general blog post.

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<sup>199</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, pages 37-38.

<sup>200</sup> Sam Cox, “Simplifying programmatic: first price auctions for Google Ad Manager”, 6 March 2019, available at <https://www.blog.google/products/admanager/simplifying-programmatic-first-price-auctions-google-ad-manager/>.

Yet the authors criticize us, asserting that “*their [G&K’s] speculation is contrary to the public record.*”<sup>201</sup> To support their view, they cite the same blog posts we examined in our paper, as well as Google’s web support manager. In particular, the authors refer to the May 2019 blogpost from Google’s Jason Bigler. The authors assert that according to this blog post, “*no price from any of a publisher’s non-guaranteed advertising sources, including non-guaranteed line item prices, will be shared with another buyer before they bid in the auction.*”<sup>202</sup> The authors conclude that

“[t]his is an unambiguous indication that no bidder in the unified first-price auction in Ad Manager – including AdX buyers – has access to any other bidders’ information before submitting their bids, nor to bids from header bidding auctions”.<sup>203</sup>

“Unambiguous” is a strong word. Reading the passage from the Jason Bigler blog post quoted by the authors initially confused us, for we did not remember such language in that. It proved we were right as upon further inspection we found out that Google in the meantime has *modified* Jason Bigler’s blog post, without any notice of update. We have already provided above how Jason Bigler’s blog post read when it was first published on 10 May 2019 (see Figure 1 above). The blog post remained the same at least until 15 November 2019, when it was last archived by the Wayback Machine.<sup>204</sup> This is how the blog post looks today, after Google’s modification:

Figure 2: Jason Bigler’s blog post today (source: Google Blog<sup>205</sup>)

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<sup>201</sup> Google Report, page 27.

<sup>202</sup> Google Report, page 27 (emphasis added). The authors also quote Sam Cox’s earlier blog post from March 2019, but they end up making mistakes and confusing the reader. It is recalled that Sam Cox’s blog post from March 2019 stated that “[a]n advertising buyer’s bid will not...be able to set the price for another buyer.” The authors argue in page 28 of the Google Report that according to *this* blog post, “*non-guaranteed advertising sources include both non-guaranteed line items (like those used to source header bidding auction bids) and other non-guaranteed advertising sources, namely the third party ad exchanges and ad networks participating in Google’s Open Bidding and ad buyers competing on AdX*”. This is obviously wrong, as Sam Cox’s March 2019 blog post did not even include the term “non-guaranteed advertising sources”. That term was used two months later (in May 2019) by Jason Bigler in his own blog post. Perhaps the authors simply confused the blog posts, yet we cannot help but notice how they try to mislead the reader by using language that suggests that there is only one blog post, while in fact there are two blog posts (one from Sam Cox in March 2019 and one from Jason Bigler in May 2019).

<sup>203</sup> Google Report, page 28.

<sup>204</sup> <https://web.archive.org/web/20191115115834/https://www.blog.google/products/admanager/update-first-price-auctions-google-ad-manager/>, last accessed on 22 May 2020.

<sup>205</sup> <https://www.blog.google/products/admanager/update-first-price-auctions-google-ad-manager/>, last accessed on 22 May 2020.

After the transition, Ad Manager will have a single auction that compares the prices from a publisher’s guaranteed campaigns with all of a publisher’s non-guaranteed advertising sources – including real-time bidding partners (such as Authorized Buyers and Exchange Bidding partners) and non-guaranteed line items (including those that publishers use in their header bidding implementations). Going forward, no price from any of a publisher’s non-guaranteed advertising sources, including non-guaranteed line item prices, will be shared with another buyer before they bid in the auction. As has always been the case, all real-time bidding partners integrated with Ad Manager – including Google Ads and Display & Video 360 – will be notified of an auction at the same time.

This is the version that the authors rely on in the Google Report. It is somewhat amazing to note how small modifications in a text can alter its meaning. In the new version, Google strategically removed one of the dashes “ – ” to alter the meaning of the text, so that non-guaranteed advertising sources would now include non-guaranteed line items (which are used for header bidding). In addition, Google inserted a new phrase, so that the blog post now states that

“Going forward, no price from any of a publisher’s non-guaranteed advertising sources, **including non-guaranteed line item prices**, will be shared with another buyer before they bid in the auction”. (emphasis added).

In addition, Google also modified the page on Open Bidding on its web support manager accordingly. At the time of writing our paper, Google’s web support manager page on Open Bidding read as follows:

Figure 3 – How Open Bidding Works – November 2019 (Source: Web Archive<sup>206</sup>)

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<sup>206</sup> <https://web.archive.org/web/20191120001210/https://support.google.com/admanager/answer/7128958>, last accessed on 22 May 2020.

## Auction dynamics

The real-time bids (RTB) from yield partners compete as part of [dynamic allocation](#) in a unified auction. The best Ad Manager line item rate, expected Mediation yields and exchange bids are compared at the same time and the top bid wins the auction. Ad Exchange and yield partners bid once for each impression.

All participants in the unified auction, including Ad Exchange and third-party exchanges, compete equally for each impression on a net basis. Each exchange runs its own auction independently and then submits its bid into the unified auction.

This is how it reads today:

Figure 4 – How Open Bidding Works – May 2020 (Source: Google web support manager)<sup>207</sup>

## Auction dynamics

The real-time bids (RTB) from yield partners compete as part of [dynamic allocation](#) in a unified auction. The best Ad Manager line item rate, expected Mediation yields and exchange bids are compared at the same time and the top bid wins the auction. Ad Exchange and yield partners bid once for each impression.

All participants in the unified auction, including Ad Exchange and third-party exchanges, compete equally for each impression on a net basis. Each exchange runs its own auction independently and then submits its bid into the unified auction. Ad Manager sends the reserve price for the unified auction to all eligible Ad Exchange buyers and Open Bidding participants (including third-party exchanges or networks). The reserve price is at least the maximum of the temporary CPM calculated by Ad Manager for the best eligible guaranteed line item or the floor price configured by the publisher (as may be adjusted, at the publisher's option, by various Ad Manager optimizations). The reserve price is not set by either the value CPMs of remnant line items that are competing for the impression or any bids received from any Ad Exchange buyers or Open Bidders for the impression. No auction participant receives any information about any other party's bids prior to completion of the auction.

As a comparison of the text shows, the information which the authors cite from Google's web support manager in page 28 of the Google Report did not exist at least as of November 2019.

Now, one may argue that we should welcome Google's clarifications in the Jason Bigler blog post and its web support manager – it seems Google itself realized the blog post was far from “unambiguous”, or else it would not change it *ex post*. However, these rather “timely” clarifications question the credibility of Google and its “experts”.

First, and most importantly, Google did not say that it updated the blog post of Mr. Bigler *after* his departure from the company in September 2019 (there is no such notice in the blog post

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<sup>207</sup> <https://support.google.com/admanager/answer/7128958>, last accessed on 22 May 2020.

itself).<sup>208</sup> This tactic makes us wonder whether this is just the tip of the iceberg, i.e. whether Google has done this in the past and/or will do it again in the future. The only reason we found out that Google changed the blog post was that we happened to have a slightly different recollection of the language used and we were able to retrieve the original through Web Archive. This makes us wonder what else Google may edit in its blog and web support manager over time in order to better accommodate its arguments, rebut its critics or, even perhaps, improve its record, in the wake of antitrust investigations.

Second, we are surprised the authors criticize us for misunderstanding Google’s blog posts, yet did not bother to check our article, where we cite Jason’s Bigler blog post in its original form and compare it with what they quote and consider as “unambiguous”.<sup>209</sup> Whether a deliberate omission or not, this reveals that the authors did a rather poor job.

With that background in mind, we now move to consider the Google blog post as it is now. At first sight one might think that everything is clear; the price floor for the Unified Auction is not set by the header bidding price (as it could be the case in the past), so there should be no “last look”.

We have no problem to accept Google’s statements at face value. It might very well be the case that Google made product changes so that in the Unified Auction, Dynamic Allocation does not result in AdX having “last look” over header bidding. However, that is not the end of the matter. The reason is that Google Ads may *still* have a distinct advantage over everyone else in the auction by taking advantage of the vast bidding data of its rivals that Google collects or at the very least by utilizing the “minimum bid to win” information. Google can build sophisticated bidding algorithms that predict with high level of precision the bids of rivals (be it rivals participating through header bidding or Open Bidding or Authorized Buyers), so that Google Ads may outbid them by a penny. This is not the same “last look” AdX had as a result of Dynamic Allocation but could be another form of advantage with a similar effect. While we raise this concern in our 2020 paper,<sup>210</sup> the Google Report does nothing to alleviate it.

In addition, the authors do nothing to address our main concern when it comes to Open Bidding and the Unified Auction, which is that the Unified Auction is inherently non-transparent and a “black box”. It is an auction that happens on Google’s servers where Google is the organizer

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<sup>208</sup> Sarah Sluis, “Google’s Ad Business Undergoes Massive Reorganization”, *AdExchanger*, 20 September 2019, available at <https://www.adexchanger.com/platforms/googles-ad-business-undergoes-massive-reorganization/>, stating that “Jason Bigler, the recently appointed head of Google Ad Manager, is departing, moving to a fin tech after a long run at both DoubleClick and Google.”

<sup>209</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, pages 37-38.

<sup>210</sup> *Id.*, pages 34-35.

of the auction and collects the bidding data of participants, while at the same time it competes with them. To put it bluntly, in such a setup, there is no way to ensure the auction is run fairly.

Finally, the authors note they are not sure what we mean when suggesting that Ad Manager “*might simply pass less information to rival exchanges about the user or the impression or make it harder for them to identify the user*”.<sup>211</sup> Instead, they proclaim that

“it is of course true that sharing certain user information with third-parties could well have privacy and regulatory implications. That is something that G&K do not seem to account for given their focus on the financial interests of certain large publishers.”<sup>212</sup>

Once more, the authors did not have regard to our argument, nor did they check the footnote in our paper which explained the identification problems arising from the double cookie matching in the case of Open Bidding (a first cookie matching between Google and the Open Bidder; and then a second cookie matching between the Open Bidder and its own bidders).<sup>213</sup> This is a general problem with server-to-server header bidding solutions, as noted by many industry commentators:<sup>214</sup> each additional cookie matching entails additional loss rates. The result is that Google, as the provider of Open Bidding and with direct presence on the publisher’s website through its tags, can easily identify the user by reading its cookie. It then has to sync its cookie with Authorized Buyers, where some loss rates may occur – with the exception of Google Ads or DV360 where loss rates are minimal. Open Bidders, on the other hand, have no access to the publisher’s webpage and thus have to rely on what Google provides them to identify the user. They have to sync their cookies with Google (as explained above) – where loss rates may occur – and then sync again with their own bidders – where additional losses may occur. This is why server-side bidding solutions are problematic when it comes to identifying the user, and for this reason are generally credited with resulting in less publisher revenue (since, when ad buyers cannot identify the user, they bid low or not at all).

One should finally point out that the authors’ privacy argument is totally irrelevant since, as explained above, Google shares the Google User ID with Open Bidders within the context of cookie syncing.

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<sup>211</sup> Google Report, page 28, referring to Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, pages 26-27.

<sup>212</sup> Google Report, page 28.

<sup>213</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, page 34, footnote 75.

<sup>214</sup> See e.g., Sarah Sluis, “Header Bidding Goes Server-Side: 6 Things You Should Know”, *supra* footnote 193.

### 3.2. On “minimum bid to win”

Next, the authors take issue with the concerns we have raised with regard to the “minimum bid to win” information which Google may share post-auction with Authorized Buyers and Open Bidders.

“Minimum bid to win” informs buyers of the minimum bid they had to bid in order to have won the auction. This information helps buyers optimize their bidding strategies for future auctions, as it can be fed into their bidding algorithms. While this information is made available to Authorized Buyers and Open Bidders, it is not provided to header bidding demand partners. We noted in our second major ad tech paper that this may incentivize buyers to steer their ad spend away from header bidding and into Google-controlled programmatic channels (namely Authorized Buyers and Open Bidding) in order to receive this extra piece of information.<sup>215</sup> The very same concern was expressed by the CMA in its Interim Report:

“This information [minimum bid to win] is provided to SSPs bidding through Open Bidding but cannot be provided to those bidding through header bidding, as Google Ad Manager does not know the identity of header bidders. As a result, it provides an incentive for non-Google SSPs to use Open Bidding rather than header bidding. When using Open Bidding, however, SSPs are charged an additional fee, placing them at a disadvantage compared to AdX.”<sup>216</sup>

The authors fail to challenge our position. In the first place, they argue that “minimum bid to win” is not provided to header bidding demand partners because this is technically impossible:

“Header bidding auctions take place outside of Ad Manager, before the ad server is called. Google does not have the ability to provide ‘minimum bid to win’ information to header bidding participants because it does not know the identity of the participants.”<sup>217</sup>

This is technically wrong as the authors should know. Google could provide the “minimum bid to win” information to header bidding participants, but this would require Google to co-operate e.g., with Prebid.org, the independent industry organization with oversight over the open-source solutions of Prebid.js (which is client-side) and Prebid Server (which is server-side), without having to participate in Prebid. We understand that Google is simply not willing to participate in any discussions with Prebid.org. In addition, publishers themselves cannot provide the “minimum bid to win” information to header bidding participants, as they do not receive such information in the first place. Worse, publishers’ ability to deduce the “minimum

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<sup>215</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, pages 40-41.

<sup>216</sup> CMA Interim Report, paragraph 5.224.

<sup>217</sup> Google Report, page 29.

bid to win” information by reviewing bidding activity on their inventory has been severely limited ever since Google decided to prohibit them from linking GAM Data Transfer file (as discussed in the next sub-section). The effect of this prohibition is that publishers cannot have a holistic view of bidding activity across all programmatic channels (both Google-controlled channels, such as Open Bidding, and non-Google-controlled channels, such as header bidding) and act upon it (e.g., calculate the minimum bid to win and share it with header bidders).<sup>218</sup>

In the second place, the authors argue that all Authorized Buyers and Open Bidders are eligible to receive “minimum bid to win”:

“Second, all real-time bidders in Ad Manager’s unified first-price auction are eligible to receive this information, including not just Google’s own ad buyers (Google Ads and DV360), but also all competing ad buyers on AdX [...] and all of the more than 20 competing third-party ad exchanges participating in Open Bidding. Thus, whichever of those tools buyers bid through—Google or its competitors—they receive the same “minimum bid to win” information from Google.”<sup>219</sup>

Why this is an argument that challenges our position is something we do not understand. We have always said that “minimum bid to win” can be provided to all Authorized Buyers (i.e. not only Google’s ad buyers) and Open Bidders. Our concerns are, first, that it is not shared with header bidding demand partners, and thus buyers may be incentivized to buy through Google-controlled programmatic channels, and, second, that buyers may prefer to buy through Google’s own products (Google Ads, DV360) instead of an Open Bidder, as in the latter case the publisher incurs an additional 5%-10% fee (and so a lower percentage of ad spend will result in working media). So, the authors’ argument is irrelevant.

In the third place, the authors observe that the “minimum bid to win” information is provided post-auction (i.e. after the auction closes). As a result, they argue,

“it cannot provide these bidders with an advantage over other bidders during the auction, much less the ability to use the information to lower their bids in the auction. [...] After all, past bid information does not provide certainty for future auctions. For every new auction for a new ad impression, ad buyers always face the uncertainty of losing or winning and have to put it what they deem competitive bids on that basis, without knowing what another buyers is going to bid.”<sup>220</sup>

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<sup>218</sup> Note also that such a solution would come with additional technical and practical limitations: since buyers would need such information at scale, they would have to establish data-sharing relationships with thousands of publishers.

<sup>219</sup> Google Report, page 29 (internal citation omitted).

<sup>220</sup> Google Report, page 30.



This argument again misses the point; the fact that the “minimum bid to win” information is shared only with Authorized Buyers and Open Bidders creates an information advantage for buyers routing their spend through these channels vis-à-vis buyers purchasing inventory through header bidding. As the authors themselves acknowledge, that would happen to the detriment of header bidding:

“[...] ad buyers will be better informed to bid to win in the future and [...] that, in turn, **will attract more buyers and spend to the auction.**”<sup>221</sup>

In addition, the authors’ argument about “minimum bid to win” being provided post auction reveals a patent lack of understanding of RTB auctions and the use of machine learning. We are well aware that the “minimum bid to win” information is provided post-auction. That says nothing about the buyers’ ability to use it to train their bidding algorithms and refine their bidding strategies. Given the billions of impressions processed by ad buyers each day, the fact that “minimum bid to win” is provided post-auction is immaterial.

Finally, it is interesting to note that, while Google shares the “minimum bid to win” information with Authorized Buyers and Open Bidders, Google may have a technological advantage over every other ad buyer when it comes to utilizing “minimum bid to win” due to its advantage in machine learning. As we observed above, Google may use “minimum bid to win” to train Google Ads’ bidding algorithm to predict how much it needs to bid to beat its rivals, thus affording it a new type of advantage.

Relatedly, it would be interesting to find out to which extent Open Bidders and/or Authorized Buyers (except for Google Ads and DV360) have *actually* started utilizing the “minimum bid to win” information. The reason is that we heard from two different ad tech vendors that utilizing “minimum bid to win” is cumbersome and requires heavy development work, and thus they have not used it yet. Part of the challenge is that there is no field in the OpenRTB protocol which Open Bidders could use to pass on the “minimum bid to win” information to their bidders. This is something regulators could easily ascertain.

### 3.3. On the new Bid Data Transfer file

The authors then discuss the new Bid Data Transfer file, which is supposed to provide publishers “*additional auction transparency.*”<sup>222</sup> As we have observed elsewhere, the new Bid

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<sup>221</sup> Google Report, page 30 (emphasis added).

<sup>222</sup> Google Report, page 30.

Data Transfer file comes with a significant restriction: it cannot be linked to other Google Ad Manager Data Transfer files (while in the past such files could be linked).<sup>223</sup>

This restriction has created considerable inefficiencies in the way publishers monetize their inventory and may affect competition among ad exchanges. Previously publishers would link various Data Transfer Files from Google Ad Manager to measure the incremental value brought by non-Google ad exchanges participating through header bidding vis-à-vis Google's own ad exchange and thus make better informed decisions when monetizing their inventory. That is no longer possible. As the CMA observed, the result is that

“SSPs will find it increasingly difficult to demonstrate how they add value for publishers, while publishers will have less incentive to sustain the costs of integrating non-Google SSPs through header bidding.”<sup>224</sup>

The authors challenge our position on two main grounds, one technical and one related to privacy. In the first place, the authors contend that the best way to compare the performance of ad exchanges is through A/B testing:

“the best way to compare the performance of ad exchanges to each other and to AdX is to run a randomized controlled experiment (or “A/B” test). This is superior to comparing bids because it controls for all confounding factors (such as page latency, impression discrepancies, or user experience impacts). [...] Google's help center pages for Ad Manager indicate that it supports such publisher experimentation, by making it easy for publishers to compare slices of traffic and obtain accurate experimental results. As a result, there is no basis for the claim that publishers are unable to analyze the efficacy of header bidding, let alone that Google has attempted to stop them from doing so.”<sup>225</sup>

As a preliminary remark, we wonder why Google should decide for its customers what the best way to measure the performance of their demand partners is. Saying that publishers may resort to A/B testing instead of using Data Transfer files does not justify why Google prevents them from using Data Transfer files. After all, having the ability to use Data Transfer files *on top of* A/B testing is necessarily better than having the ability to run A/B testing alone.

In any event, the authors' technical allegations are flatly wrong. The granular type of analysis publishers can do with Data Transfer files cannot be replaced by A/B testing, and suggesting the opposite would cause laughter in any crowd of ad tech experts. A/B tests are part of the portfolio of analytical tools publishers may use to test performance of their partners, but in no way do they provide the level of granularity available on Data Transfer files. To put it simply,

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<sup>223</sup> Damien Geradin and Dimitrios Katsifis, Trust me I'm fair, *supra* footnote 3, pages 32-33.

<sup>224</sup> CMA Interim Report, paragraph 5.222.

<sup>225</sup> Google Report, pages 30-31 (internal citation omitted).

publishers may wish to measure the incremental value of header bidding partners by comparing the difference between (i) the winning header bidding bid; and (ii) the losing bid from an Open Bidder or Authorized Buyer. That cannot be done with A/B testing.

Furthermore, A/B testing can be very costly (as it entails developer work) and may have commercial implications which publishers cannot always afford. For instance, a publisher disabling one exchange for a random set of impressions to perform A/B testing ends up losing bid density and revenue. We also heard from one publisher that, while it may use key-values in order to bring down the cost of A/B testing, it is not possible to exclude AdX for the purposes of A/B testing.

Therefore, the notion that A/B testing can or should replace analysis through Data Transfer files fails to convince.

In the second place, the authors elaborate on the privacy argument at which Google had hinted when announcing that publishers will not be able to link Data Transfer files. They state that

“Google limits joining the BDT file with other Ad Manager data files for a good reason: ‘to prevent bid data from being tied to individual users.’ This is a matter of user privacy considerations, rather than an attempt to harm competition. That is not surprising or ‘puzzl[ing],’ as G&K suggest, since the BDT file provides information for both won and lost bids. Joining such comprehensive bid files with user data from other Ad Manager Transfer files would enable publishers to see multiple advertiser attempts to target a specific user, including all failed attempts (lost bids), which in turn could allow creation of significantly more detailed user-specific profiles. For instance, a publisher may observe a bicycle manufacturer win an impression when a user visits a website and infer that the user is interested in bicycles; this is inevitable because the bicycle ad appears on the publisher’s website. But let’s imagine a hypothetical where the publisher could also see all losing bids for that specific impression. It could then observe that a student loan servicer, a New York City vegan restaurant, a skin care product manufacturer and a crib manufacturer all bid highly for the same impression, giving the publisher the ability to infer, in one instant, and use for its own targeting purposes, a far more complete picture of the associated user’s interests and needs.”<sup>226</sup>

The authors’ attempt to justify Google’s policy change on privacy considerations falls flat. First, publishers may still rely on winning bids to build “*significantly more detailed user-specific profiles*”. The same user (e.g., a loyal reader of a newspaper) is likely to be exposed to several ads over the course of a single week, and it is highly likely that these ads will not be from the same advertiser (for frequency capping reasons). For example, one day the ad may be from the bicycle manufacturer, the next day it may be from the New York City vegan restaurant, and the following day from a skin care product manufacturer and so on.

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<sup>226</sup> Google Report, page 31 (internal citation omitted).

Second, and most importantly, we still cannot understand why Google should decide whether publishers may use such data to build user profiles. If the publisher obtains user consent in compliance with the GDPR in order to build user profiles for advertising purposes, then why should Google even have a say about whether the publisher can do so or not?

As the two of us recently observed in a co-authored paper, “*Google considers user consent sufficient for it to engage in extensive data processing activities, including combining data across its user-facing services under a single privacy policy and associating data with real-world identities.*”<sup>227</sup> It is interesting to note how the setting allowing Google to associate web and app activity of users (e.g., browsing history) with real-world Google accounts is enabled by default when someone creates a new Google account,<sup>228</sup> which we doubt whether it may even comply with the GDPR’s requirement for obtaining valid user consent. But when it comes to publishers, Google rejects that they may obtain such user consent for their own purposes. The fact that Google seeks to hold them to a higher standard than the one applied to itself raises suspicions as to whether its privacy concerns are genuine. Google’s stance is paternalistic and runs contrary to the very foundation of privacy legislation: giving users the ability to choose whether they consent or not.

In addition, it is interesting to note how according to the authors, linking bidding data with a user would “*giv[e] the publisher the ability to infer, in one instant, and use for its own targeting purposes, a far more complete picture of the associated user’s interests and needs*”.<sup>229</sup> That makes us think that what Google actually cares about is to prevent publishers from building user profiles that would help them compete with Google and disintermediate it by e.g., making their audiences available directly to advertisers and bypassing AdX. This is quite interesting, considering that, for its own part, Google has relaxed the restrictions laid down in the agreement for the use of DFP so that, under certain circumstances, it may use the data it collects from publishers to build user profiles for its *own* benefit or that of third parties.<sup>230</sup> In other

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<sup>227</sup> Damien Geradin, Dimitrios Katsifis and Theano Karanikioti, GDPR Myopia: How a Well-Intended Regulation ended up Favoring Google in Ad Tech, *supra* footnote 3, page 37.

<sup>228</sup> Douglas C. Schmidt, Google Data Collection, 15 August 2018, available at <https://digitalcontentnext.org/wp-content/uploads/2018/08/DCN-Google-Data-Collection-Paper.pdf>, page 19. Additional screenshots available with the authors.

<sup>229</sup> Google Report, page 31 (emphasis added).

<sup>230</sup> In the past, agreements for the use of DFP would specify that the client (publisher) would have ownership of the data generated from the use of the DFP service, and Google was explicitly prohibited from using such data to retarget users elsewhere either for its own benefit or for that of third parties. Under Google’s current terms and conditions, however, there is no reference to who owns the data. The only relevant prohibition is that “*Google will not [...] use Data (including any Company Entered Data) to create a segment of users whose sole criterion for creation is that such users are End Users of the Target Properties for the purpose of targeting advertising to such segment of Target Property End Users, unless on Company’s behalf or if Company consents to such use via the Google Ad Manager user interface or*

words, Google may under certain conditions usurp the publisher’s audience and target it elsewhere (possibly at a lower price) – or even on its own properties, where it keeps 100 cents to the dollar – a practice referred to as “audience arbitrage”. This is quite different from what Google said it would do before the US Senate when it acquired DoubleClick.<sup>231</sup>

At the very least, Google could ask publishers to use the data from the Data Transfer files solely for the purpose of yield optimization (e.g., measuring the incremental value of header bidding demand partners) and not for the purpose of building user profiles “*for [their] own targeting purposes*”. Publishers could even obtain separate user consent for that specific purpose.

Finally, the authors refer to Google’s recent decision to remove contextual content categories from bid request (e.g., “news” for a news website) as an example of Google’s efforts to “*enhance user privacy protections by reducing data leakage to third-parties that could facilitate the compilation of user profiles.*”<sup>232</sup> However, saying that this policy change carried any real weight (other than serving PR purposes) would be an overstatement for the following reasons. First, as industry commentators observed, this policy change meant little to buyers as

“Google [...] only includes broad category terms, which aren’t particularly useful for contextual data solutions, according to one exec at a contextual advertising company that is also a Google partner. Signifiers like “sports” or “beauty” are too vague to be worthwhile for companies trying to drill into contextual data taxonomies, this person said.”<sup>233</sup>

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*otherwise.*” See Service Specific Terms – Google Ad Manager Service, available at [https://www.google.com/intl/en\\_us/doubleclick/publishers/dfpadx/terms/](https://www.google.com/intl/en_us/doubleclick/publishers/dfpadx/terms/), last accessed on 22 May 2020 (emphasis added). In other words, Google may use data derived from a publisher’s website to create audience segments for its *own* purposes, insofar it does not use as *sole* criterion for such segment creation the fact that the users visit the particular publisher’s website.

<sup>231</sup> At the time, Google’s then Chief Legal Officer David Drummond stressed that data collected from DoubleClick is “owned” by the client (publisher or advertiser): “...*no control over the advertising, no ownership of the data that comes with that is collected in the process of the advertising. That data is owned by the customers, publishers and advertisers, and DoubleClick or Google cannot do anything with it.*” See US Senate Hearing 110-194, “An Examination Of The Google-DoubleClick Merger And The Online Advertising Industry: What Are The Risks For Competition And Privacy?”, 27 September 2007, transcript available at <https://www.govinfo.gov/content/pkg/CHRG-110shrg39015/html/CHRG-110shrg39015.htm>. (emphasis added).

<sup>232</sup> Google Report, page 31, referring to Chetna Bindra “Additional Steps to Safeguard User Privacy”, 14 November 2019, available at <https://www.blog.google/products/admanager/additional-steps-safeguard-user-privacy/>.

<sup>233</sup> James Hercher, “Industry Shrugs As Google Announces Plans To Restrict Contextual Data”, *AdExchanger*, 14 November 2019, available at <https://www.adexchanger.com/online-advertising/industry-shrugs-as-googles-announces-plans-to-restrict-contextual-data/>.

In the second place, Google includes in the bid request the URL of the publisher’s website where the ad will be served. More specifically, since its switch to a Unified Auction, Google enables publishers to sell their inventory as either “branded” or “semi-transparent”. As Google’s web support manager explains, in the case of “branded” inventory “[t]he full URL appears for buyers and advertisers.”<sup>234</sup> In the past Google offered publishers the ability to sell their inventory on an “anonymous” basis, whereby no URL would be disclosed to bidders. This is no longer possible under the Unified Auction.

Suffice it to say that disclosing the full URL in the case of “branded” inventory can reveal the same (if not more) information about the user compared to contextual content categories. For instance, assume a user reads an article describing the symptoms of depression on a website which uses GAM and sells inventory on a “branded” basis. GAM will not send to bidders any content category (e.g., “health”), but will share the URL with them e.g., <https://www.examplewebsite.com/do-I-have-depression>.

### 3.4. On the Unified Pricing Rules

Next, the authors examine the new Unified Pricing Rules that Google rolled out as part of its switch to a Unified Auction. According to the authors, such rules are another instance where Google carefully balances the interests of advertisers and publishers. We, on the other hand, have argued that Unified Pricing Rules raise serious concerns, in that they prevent publishers from setting buyer-specific floors.<sup>235</sup> The authors challenge our position putting forward a number of arguments – none of which is convincing.

The authors argue that our concerns regarding Unified Pricing Rules do not support an antitrust theory of harm, as there is no foreclosure:

“It is important to appreciate what G&K are actually arguing here. Google enables publishers to impose price floors on ad buyers participating in its Ad Manager auction; it just does not enable publishers to discriminate against a particular ad buyer by imposing a higher price floor on that ad buyer than on other ad buyers in the auction. This is what G&K take issue with. In particular, their complaint is that Google does not enable publishers to disadvantage Google Ads (and the advertisers it represents) as a buyer in the Ad Manager auction by imposing a higher price floor on it than on third-party ad buying platforms participating in the auction. That does not support a theory of antitrust harm. There is no foreclosure of competition from the UPRs; to the

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<sup>234</sup> <https://support.google.com/admanager/answer/4584891>, last accessed on 20 May 2020. In the case of “semi-transparent” inventory “[b]uyers see your domain, but not the subdomain or path, in the bid request”.

<sup>235</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, page 31.

contrary, they promote non-discrimination, so all auction buyers compete based on the same price floor.”<sup>236</sup>

This is another example of the authors not paying attention to our arguments. We never said that Unified Pricing Rules have a foreclosing effect on competition, so their criticism is irrelevant. Instead, what we have said is that Unified Pricing Rules enable Google Ads to increase its hidden margin (on which see the discussion below on sub-section 4).<sup>237</sup> As the authors did not understand our argument, we repeat it below.

Before Google’s switch to the Unified Auction, publishers were able to set buyer-specific floors for their inventory (in the form of Open Auction pricing rules within AdX), i.e. different floors according to the buyer (e.g., the floor could be \$ 1.00 for The Trade Desk but \$ 1.20 for Google Ads). In many cases, publishers would place a higher floor for Google demand sources (Google Ads or DV360), as they are generally considered able to bid higher for particular impressions, for reasons we explain when discussing the Google Ads’ hidden margin. Under the Unified Pricing Rules, this is no longer possible: the same floor applies uniformly across all demand sources in the Unified Auction, including Google Ads, other Authorized Buyers, Open Bidders *and* remnant line items, which are used to implement header bidding. We understand that other exchanges still enable publishers to set buyer-specific floors.

It is interesting to note the tension between the fact that the Unified Pricing Rules apply to header bidding demand partners and the authors’ previous argument with regards to “minimum bid to win”. On the one hand, Google relies on the fact that header bidding takes place outside of Google Ad Manager to argue it is impossible to provide the “minimum bid to win” information to header bidding demand partners. However, the fact that header bidding takes place outside Google Ad Manager has not prevented Google from finding a way to impose the *same* floor for header bidding demand partners.

As a result of the Unified Pricing Rules, publishers are thus faced with the following dilemma: either apply the same higher floor they previously had for one partner (e.g., Google Ads) across all their partners – which may result in losing bids from other, weaker partners, and thus revenue – or apply the same lower floor across their demand partners in order to ensure they are not excluding any source of revenue. In its Best Practices for the Unified Auction, Google seems to advise publishers to opt for the latter:

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<sup>236</sup> Google Report, pages 32-33 (internal citation omitted).

<sup>237</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, pages 45-46; Damien Geradin and Dimitrios Katsifis, Online Platforms and Digital Advertising Market Study: Observations on CMA’s Interim Report (February 13, 2020), available at SSRN: <https://ssrn.com/abstract=3537864>, pages 6-8 and pages 11-12.

“[s]etting floors too high can result in lost revenue when bidders drop out of the auction, potentially leading to an increased volume of House and unfilled requests [...] Consider reducing unified floors to maintain consistent pricing across all indirect sources of demand.”<sup>238</sup>

This may lead to the lowest common denominator (the lowest floor) being applied across all partners, including Google Ads. The problem is that, as we explain below, Google Ads is able to extract a hidden margin by soliciting a high bid from its advertisers while at the same time securing the impression at a lower price. Setting a higher floor specifically for Google Ads could help publishers reduce the margin available to Google Ads, as the latter would have to either secure the impression at a higher price or not at all. With Unified Pricing Rules, it has become extremely hard for publishers to counteract Google Ads’ pricing arbitrage. As we observed in our comments to the CMA Interim Report,

“Google has an incentive to use its role in the sell-side and as the auction venue to depress prices, so that it can enlarge its own margin on the buy-side. Eventually, the combined effect of Unified Pricing Rules, “minimum bid to win” and the new Bid Data Transfer file may be just another manifestation of Google’s conflict of interests, arising from its presence across the value chain.”<sup>239</sup>

It is interesting to note that Unified Pricing Rules may act like price parity clauses, in that they prevent publishers from selling to one programmatic demand partner at a lower reserve price; the same reserve price has to be offered across all programmatic demand partners.<sup>240</sup>

Against that background, we now examine the authors’ arguments in favor of Unified Pricing Rules and against buyer-specific floors.

In the first place, the authors assert that buyer-specific floors can exacerbate the problem of advertiser self-competition, as they could be used by publishers to artificially inflate prices.

“Discriminatory price floors can exacerbate the adverse effects to the ecosystem from advertiser self-competition problems. As discussed, with the growing publisher use of auction of auctions solutions like header bidding, a single ad impression will be auctioned through multiple different exchanges at the same time. But it is difficult for advertisers and their ad buyers (e.g. DSPs or ad networks) to determine whether they are bidding on different or the same impression in different ad exchanges. That means

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<sup>238</sup> Google Ad Manager, “Unified First-Price Auction - Best practices”, Version 2.0, available at [https://services.google.com/fh/files/misc/unified\\_first-price\\_auction\\_best\\_practices.pdf](https://services.google.com/fh/files/misc/unified_first-price_auction_best_practices.pdf), last accessed on 20 May 2020, page 4.

<sup>239</sup> Damien Geradin and Dimitrios Katsifis, Online Platforms and Digital Advertising Market Study: Observations on CMA’s Interim Report *supra* footnote 237, page 11.

<sup>240</sup> See Dina Srinivasan, *supra* footnote 32, pages 50-51.



there is increasing risk that advertisers bidding for an impression unknowingly bid against themselves. Discriminatory price floors could be used by publishers to take advantage of advertiser self-competition to drive up bids with little downside risk to the publisher. A publisher could impose a higher price floor for the same impression in exchange X than in exchange Y, knowing that the same DSP or ad network bids on both, to try to get the higher bid from that DSP. If it fails, it will likely still get the lower price from that same DSP in the other exchange. This kind of gaming of the auction could further undermine advertiser trust in the auctions and cause advertisers either to participate less or bid lower than they otherwise would to try to counteract practices that take advantage of self-competition. That would ultimately lead to suboptimal output.”<sup>241</sup>

Unified Pricing Rules were, according to the authors, introduced to “*prevent practices that increase auction complexity and threaten to harm auction integrity.*”<sup>242</sup>

The authors’ argument is fundamentally misplaced. We have already explained why Google’s concern over potential advertiser self-competition is pretextual, since if Google were truly concerned about this issue it would consider help standardizing impression/transaction IDs. The example the authors bring is nevertheless wrong for an additional reason. The authors argue that a publisher could impose a higher floor for the same impression in Ad Exchange X than in Ad Exchange Y, knowing that the same buyer bids on both, to try to get the higher bid. If a publisher does that, however, the ad buyer may react by steering its ad spend to the exchange with the lower floor, as part of its Supply Path Optimization efforts.<sup>243</sup> Ad buyers constantly refine their strategy aimed at finding the best supply path to publisher inventory.

In fact, there is only one ad buyer that cannot re-route its ad spend to another exchange in response to a higher floor: Google Ads. The reason is that Google Ads demand is overwhelmingly channeled through AdX. This reinforces our conclusion that Google used its presence on the sell-side to roll out a feature (Unified Pricing Rules) in order to help its position on the buy-side and enlarge its margin.

To put it in a nutshell, contrary to the authors’ allegations, publishers had valid reasons to impose buyer-specific floors. This practice was necessary in order to account for the fact that

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<sup>241</sup> Google Report, page 33.

<sup>242</sup> *Ibid.*

<sup>243</sup> See also CMA Interim Report, Appendix H, paragraph 63: “*DSPs often implement a technique known as ‘supply path optimisation’. DSPs choose their preferred paths to supply and stop actively listening to open bid requests from non-preferred SSPs. There are multiple variables taken into consideration when deciding whether a supply source should be given preferred status; one of them is price, which is measured as an expected CPM. This can disincentivise suppliers from manipulating or otherwise inflating prices in cases where there are alternative access points to the same ad inventory through other more transparent or cost-effective suppliers.*”

certain ad buyers have superior information compared to rivals and may use their internal auction to extract the surplus from their advertisers' higher willingness to pay, which would otherwise flow to the publisher.

In the second place, the authors argue that we ignore the allocative inefficiency that buyer-specific floors may give rise to:

“a discriminatory floor can give rise to an allocative inefficiency—a buyer with a higher valuation (and bid) could lose out to a buyer with a lower valuation (and bid) because it faces a higher floor. This is inefficient in the sense that there is hypothetical gain from trade that is not exhausted: the low-value winner would be happy to trade the won impression with the high-value loser at a price between their respective valuations (if such a trade were feasible).”<sup>244</sup>

We are hardly impressed by this argument. The fact that Google Ads is a second-price auction may also lead to the allocative inefficiencies which Google is not concerned about. Consider a simplified example where Google Ads runs an auction whereby advertiser A bids \$ 10 while advertiser B bids \$ 5. Google Ads will then compete in the Unified Auction with a bid of \$ 5 (assuming it does not take any margin, and leaving aside the issue of CPC-to-CPM conversion for the sake of simplicity). Imagine that another ad buyer, Media Math, also ran a second-price auction, where advertiser C bids \$ 7 while advertiser D bids \$ 6. Media Math will compete in the Unified Auction with a bid of \$ 6 (assuming that it does not take any margin). In that case, the impression is won by advertiser C despite the fact that advertiser A valued the impression more.

In addition, it should be noted that allocative inefficiencies can emerge as a result of asymmetric information: if buyer A (e.g., Google Ads) has better information, it might be in a position to win the impression despite buyer B having a higher valuation. Setting buyer-specific floors that reflect such information asymmetry across buyers could actually mitigate such allocative inefficiency.

After all, one should not forget how Dynamic Allocation may have resulted in allocative inefficiencies for years, something the authors conveniently omit to discuss. Under Dynamic Allocation, AdX could cherry-pick impressions, while the ad exchange ranked first in the waterfall would not even be called, even if it could return a higher bid in real-time. In that case, Dynamic Allocation gave rise to an allocative inefficiency, since the impression would not be won by the buyer with the highest valuation.

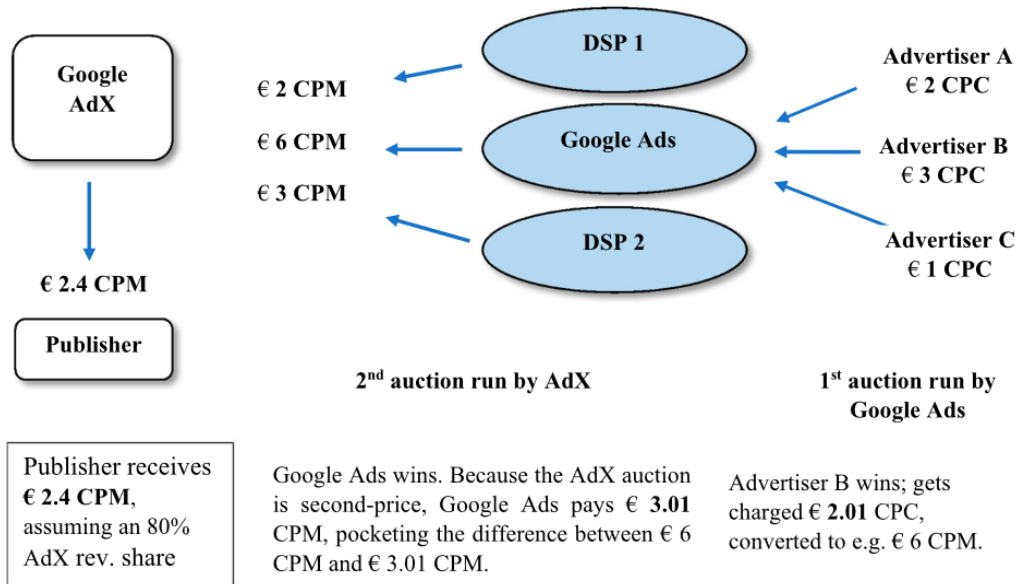
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<sup>244</sup> Google Report, pages 33-34 (internal citation omitted).

#### 4. Google Ads' hidden margin

By way of reminder, in our first paper we explained how Google could take advantage of the existence of multiple consecutive second-price auctions for the same impression (a *first* auction run by Google Ads, whereby advertisers would compete typically on a CPC basis; and a *second* auction organized by AdX whereby Google Ads would compete with other ad buyers on CPM basis) to charge a hidden margin, unbeknownst to the publisher or advertiser, which comes on top of its disclosed fees.<sup>245</sup> More specifically, it is recalled that, before Google's switch to a Unified Auction, AdX would run a second-price auction, i.e. an auction whereby the winner would pay slightly more (e.g., \$ 0.01 more) than the second highest bid. If Google Ads was the winner in the AdX auction, it could make a margin by pocketing the difference between (a) the price charged to the winning Google Ads advertiser and (b) the price Google Ads would pay in the AdX auction (which could be much lower than the amount of its bid, given the second-price nature of the AdX auction). We repeat our "model" below for the reader's convenience:

Figure 5: a simplified illustration of Google's arbitrage mechanism before Google's switch to a Unified Auction (Source: Trust me, I'm fair<sup>246</sup>)



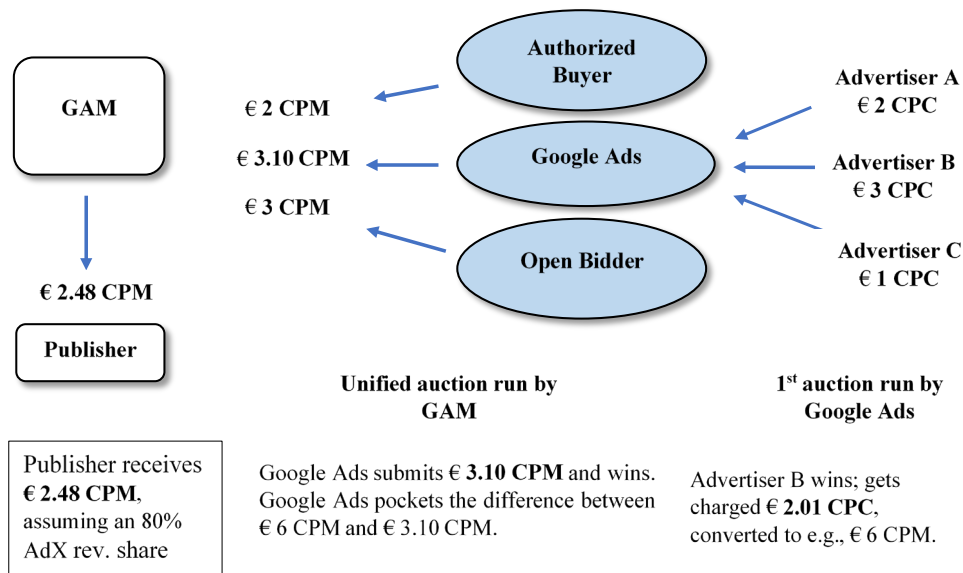
In our second paper, we explained how Google's switch to a Unified Auction has done little to remove its ability to engage in such "pricing arbitrage" practice. The reason is that Google Ads,

<sup>245</sup> Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, *supra* footnote 3, pages 85-89.

<sup>246</sup> Damien Geradin and Dimitrios Katsifis, Trust me I'm fair, *supra* footnote 3, page 21.

which continues to run its internal auction, may simply submit in the Unified Auction a bid which is *lower* than the price it charges to the winning Google Ads advertiser, thus pocketing the difference. In fact, the introduction of Unified Pricing Rules may have even increased the margin Google may capture, by making it easier for Google Ads to secure impressions at a lower price.<sup>247</sup> The following figure shows how Google’s arbitrage mechanism may happen within the context of the Unified Auction.

Figure 6: a simplified illustration of Google’s arbitrage mechanism after the switch to a Unified Auction



We have noted how such a practice could amount to an exploitative abuse in breach of Article 102(a) TFEU (provided Google is dominant),<sup>248</sup> and observed that the opacity around Google’s overall fees could very well trigger antitrust concerns – much like Google’s refusal to disclose AdSense’s revenue share led to antitrust action in Italy and France.<sup>249</sup> Finally, we have also observed how Google’s practice of charging a hidden margin could be described as rent extraction facilitated by lack of competition throughout the ad tech stack.<sup>250</sup>

<sup>247</sup> *Id.*, pages 44-46.

<sup>248</sup> Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, *supra* footnote 3, pages 85-86.

<sup>249</sup> Damien Geradin and Dimitrios Katsifis, Google’s (forgotten) monopoly – Ad technology services on the open web, *supra* footnote 3, paragraphs 43-44.

<sup>250</sup> Damien Geradin and Dimitrios Katsifis, Trust me I’m fair, *supra* footnote 3, page 23.

In response, the authors put forward a number of arguments, none of which is convincing. In the first place, they criticize us for failing to have due regard to the fact that Google Ads creates value for publishers and advertisers by charging advertisers on a CPC basis while paying publishers on a CPM basis:

“G&K do not appear to appreciate the value Google creates for advertisers and publishers through the impression-to-click conversion carried out by Google Ads. Google Ads runs an internal auction-like process for advertisers (“internal auction”), separately and before Google Ads in turn bids in the auction that takes place on AdX. This is common in the industry. Many ad buying platforms and ad networks do that. In the case of Google Ads, most advertisers in its internal auction bid on a cost-per-click (CPC) or sometimes cost-per-action (CPA) basis. Those advertisers only pay when users click on their ads (in case of CPC) or if the ad leads to some other kind of action beyond a click (in case of CPA).

Once the winning advertiser has been established in that internal auction, Google Ads then, in an attempt to secure the impression for that advertiser, participates in the AdX auction, together with many other ad buyers (including many third-party DSPs). [...] Google Ads pays what it bids for any ad impression it wins on AdX, so that the publisher selling that ad impression (on its website or app) always gets paid. Since a click is a relatively rare event, most of the instances in which Google Ads gets to deliver an ad involve Google paying the publisher and receiving nothing in return from the advertiser.

This system is highly procompetitive. It means that Google promotes market liquidity by, on the one hand, only requiring advertisers to pay when their ads trigger a click or conversion, while on the other hand ensuring that publishers are guaranteed to receive payment in accordance with the bid for every impression they sell on AdX. Google thus eliminates risk for both advertisers and publishers.”<sup>251</sup>

The argument seems to be that Google incurs a risk by making the CPC-to-CPM conversion and should thus be rewarded for that:

“Of course this model creates risk for Google, because the reality is that the vast majority of ad impressions do not lead to clicks. So Google has to pay publishers without in turn receiving any payment from advertisers. Accordingly, it must be the case that, on most transactions, Google has a negative balance: it pays money but does not receive anything. That only works well if Google estimates click through rates reliably. [...]

Google has invested to develop and operate algorithms and machine learning to assess and manage this risk and make it profitable. As any company would be, Google is

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<sup>251</sup> Google Report, pages 48-49 (internal citations omitted).

entitled to earn a return for creating such value by taking on risk and thus reducing it for customers.”<sup>252</sup>

These statements call for several observations. First, it is rather remarkable that the authors do not even try to challenge our model whereby Google may make a margin by pocketing the difference between the price charged to the Google Ads advertiser and the price Google Ads pays when it secures an impression – and which comes on top of the revenue share that GAM (AdX) charges publishers for running the auction. The authors’ silence may well amount to an *implicit admission* of our model.

Second, the authors *explicitly admit* that Google Ads earns a margin.<sup>253</sup> Unsurprisingly, they avoid any reference as to how exactly Google Ads earns such margin. Instead, almost the entirety of their analysis is focused on justifying the existence of such margin on the basis of the risk Google allegedly incurs due to the CPC-to-CPM conversion. Yet this misses the point. If Google considers it should be rewarded for making such a conversion, then it should disclose the level of its margin and how it calculates it, but it does not. Instead, the authors consider it appropriate that Google can keep its margin secret and determine its level as it sees fit. The authors provide not the slightest indication of how Google determines the level of its margin.

In addition, we are very skeptical about the level of risk Google incurs due to the CPC-to-CPM conversion. Once more, the authors provide no indication as to the *magnitude* of this risk. We think there is a serious likelihood this risk is minimal, or Google would simply not do this conversion. Google is a company with unparalleled amounts of data on user interests, preferences and actions post-ad exposure (conversion, Click-Through Rates etc.), which it has amassed over more than a decade. To suggest it cannot use such data to minimize (if not completely eliminate) the risk it is said to incur would be outlandish. Google claims it built an algorithm as part of Enhanced Dynamic Allocation to enable AdX to outbid direct deals without posing any risk for the latter’s delivery,<sup>254</sup> and there is no reason to suggest it has not

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<sup>252</sup> Google Report, page 49 (internal citations omitted).

<sup>253</sup> The authors use the terms “margin”, “return”, and “fees” when referring to Google Ads. See Google Report, page 49 (“... *Google is entitled to earn a return for creating such value by taking on risk and thus reducing it for customers*”), page 50 (“*Google Ads earning a return for its services*...”; “...*there is nothing unusual about earning a margin for each service*”; “...*one would expect the returns targeted by Google Ads to be lower*...”) and page 51 (“...*other critics might complain that Google Ads margins were too low. There should be a wide band of pricing within which a business is safe from competition law claims that fees are either too high or too low*”).

<sup>254</sup> See e.g., <https://support.google.com/admanager/answer/3721872?hl=en>, last accessed on 27 May 2020, stating that “*the dynamic allocation process protects delivery of guaranteed line items by dynamically adjusting the temporary CPM. Therefore, a guaranteed line item that is behind schedule wins often enough to stay on pace to satisfy its goal and pacing settings. If the temporary CPM is too high, Ad Manager doesn't make the call to Ad Exchange, which explains why sometimes the number of "Impressions competing" is lower than the "Eligible impressions" in the Ad Exchange opportunities report.*”

built algorithms to minimize any risk from the CPC-to-CPM conversion. After all, this is acknowledged by the authors, when they say that “*Google has invested to develop and operate algorithms and machine learning to assess and manage this risk and make it profitable.*”<sup>255</sup>

Third, in their effort to challenge us, the authors make statements that contradict Google’s November 2019 response to Questions for the Record from the US House Committee on the Judiciary (Subcommittee on Antitrust, Commercial and Administrative Law). The explicit admission that Google Ads charges a margin is significant, considering how Google submitted before the US House Judiciary Committee that it does *not* charge a fee for the use of Google Ads. We cite below the relevant question that was addressed to Google and the latter’s reply:

**“65. Assuming that an advertiser chooses to use Google’s ad tech at each step of the supply chain, please identify the average amount that would be debited at each step, assuming \$100 in ad spend.**

Google Ads is designed to allow advertisers to take advantage of the benefits of online advertising and therefore boost advertisers’ return on their investment, while giving advertisers control over how much they spend on advertising. Advertisers placing ads through Google Ads do not pay any fees, so \$100 of spending through that channel is entirely available for bidding on inventory. Furthermore, Google Ads provides advertisers data about how much it costs them, on average, for advertising that leads to customer interaction with their product. For advertisers that choose to use other products, Google charges market-driven fees that vary based on factors such as the advertiser’s volume, media spend, choices of optional services, etc. Advertisers can and do use other ad tech companies’ tools in conjunction with or instead of Google’s ad tech tools.”<sup>256</sup>

We would be very interested in hearing how the authors’ admission that Google Ads charges a margin fits within the above response to the Questions for the Record from the House Judiciary Committee. We do not see how this can be easily done, even if the language used in the reply to the Questions for the Record is stretched to its limits. Google cannot credibly argue that its reply to the Questions for the Record concerned only the “fees” that Google Ads may charge, while the authors’ analysis applies to the “margin” that Google Ads can make. Indeed, question 65 from the Questions for the Record was formulated in an agnostic manner, asking about the “*average amount that would be debited at each step*” of the supply chain. In its reply, Google made no distinction between “fees” and “margin”. If Google Ads charges a “margin” then, even if Google does not consider it to be a “fee”, it should have included it in its reply, since the effect is the same: Google appropriates part of the ad spend before it reaches the

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<sup>255</sup> Google Report, page 49 (internal citation omitted).

<sup>256</sup> Google’s Submission In Response To Subcommittee Questions For The Record Following July 16, 2019 Hearing, available at <https://docs.house.gov/meetings/JU/JU05/20190716/109793/HHRG-116-JU05-20190716-SD030.pdf>, page 38 (emphasis added).

publisher.<sup>257</sup> In any event, it should be noted that the authors themselves also use the term “fees” when discussing Google Ads’ margin.<sup>258</sup>

In conclusion, assuming that the authors’ statements about Google Ads charging a margin are correct, Google’s reply to Questions for the Record from the House Judiciary Committee appears misleading, to say the least.

In the second place, the authors rely on Google’s Form 10-K for the fiscal year ended in 31 December 2018 (the “2018 Form 10-K”) to argue that Google keeps for itself less than 30% of what the advertiser is charged:

“Google’s 2018 Form 10-K discloses that, in the aggregate, Google pays third-party publishers using Google’s ad tech products around 70.8% of the amount Google charges advertisers and ad buyers for the ads shown on those third-party publisher properties.”<sup>259</sup>

The authors then refer to third-party reports and even the CMA to support that such a figure is “*in line with industry average.*”<sup>260</sup>

The reference to Google’s 2018 Form 10-K is most interesting. The reason is that the 2018 Form 10-K does *not* say what the authors state. The authors cite page 32 of the 2018 Form 10-K. We present the relevant part in the figure below for the reader’s convenience:

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<sup>257</sup> In addition, Google cannot justify the above statement to the US House Judiciary Committee by e.g., arguing that Google Ads charges fees to publishers (instead of advertisers), as publishers have no direct relationship with Google Ads; their only relationship is with AdX, which charges them a percentage on the clearing price of the auction. Nor can Google explain the above statement to the US House Judiciary Committee by arguing it concerns any fees charged to advertisers *before* bidding for inventory on AdX (“[...] *so \$100 of spending through that channel is entirely available for bidding on inventory*”), so that it would exclude any fees charged *after* bidding. That would be distortion of language: question 65 in the Questions for the Record was about the amount debited at each step of the value chain. Google responded that in the case of Google Ads advertisers “*do not pay any fees*” and made *no* distinction between fees charged before or after bidding. The conclusion is reinforced when one considers how Google contrasted the “free” Google Ads product with its other products, where it charges fees: “[*ff*]or advertisers that choose to use other products, Google charges market-driven fees that vary based on factors such as the advertiser’s volume, media spend, choices of optional services, etc” (emphasis added).

<sup>258</sup> Google Report, page 51: “*Indeed, given the value Google Ads creates and the fact that other buy-side tool providers—such as Criteo and The Trade Desk—all charge a separate fee for their services, it would seem to be unreasonable to suggest on the one hand that Google Ads should be run as a separate business from Ad Manager and on the other hand that it should not be able to make a profit, as G&K seem to argue. Surely, if Google were to do that, yet other critics might complain that Google Ads margins were too low. There should be a wide band of pricing within which a business is safe from competition law claims that fees are either too high or too low.*” (emphasis added).

<sup>259</sup> Google Report, page 49 (internal citation omitted).

<sup>260</sup> Google Report, pages 49-50 (internal citation omitted).



Figure 7: Alphabet’s Form 10-K for the fiscal year ended 31 December 2018, page 32 (source: Alphabet Investor Relations<sup>261</sup>)

	Year Ended December 31,		
	2016	2017	2018
TAC	\$ 16,793	\$ 21,672	\$ 26,726
Other cost of revenues	18,345	23,911	32,823
<b>Total cost of revenues</b>	<b>\$ 35,138</b>	<b>\$ 45,583</b>	<b>\$ 59,549</b>
Total cost of revenues as a percentage of revenues	38.9%	41.1%	43.5%

	Year Ended December 31,		
	2016	2017	2018
TAC to distribution partners	\$ 5,894	\$ 9,031	\$ 12,572
TAC to distribution partners as a percentage of Google properties revenues <sup>(1)</sup> (Google properties TAC rate)	9.2%	11.6%	13.1%
TAC to Google Network Members	\$ 10,899	\$ 12,641	\$ 14,154
<b>TAC to Google Network Members as a percentage of Google Network Members' properties revenues<sup>(1)</sup> (Network Members TAC rate)</b>	<b>69.9%</b>	<b>71.9%</b>	<b>70.8%</b>

TAC	\$ 16,793	\$ 21,672	\$ 26,726
TAC as a percentage of advertising revenues <sup>(1)</sup> (Aggregate TAC rate)	21.2%	22.7%	23.0%

<sup>(1)</sup> Revenues include hedging gains (losses) which affect TAC rates.

The figure mentioned by the authors (70.8%) refers to the Traffic Acquisition Costs (“TAC”) Google paid to Google Network Members in 2018. As the 2018 Form 10-K notes:

“Google Network Members’ properties revenues consist primarily of advertising revenues generated from advertisements served on Google Network Members’ properties participating in:

- AdMob;
- AdSense (such as AdSense for Content, AdSense for Search, etc.); and
- Google Ad Manager.”<sup>262</sup>

In other words, publishers using Google Ad Manager are considered to be “Google Network Members”. The Google Network Members’ properties revenues reported in the 2018 Form 10-K amounted to \$ 19,982 million. According to the 2018 Form 10-K, Google paid Google Network Members \$ 14,154 million in TAC “*primarily for ads displayed on their properties*”, hence the 70.8 % figure mentioned by the authors. But the story does not end here. As always, the devil is in the details.

<sup>261</sup> [https://abc.xyz/investor/static/pdf/20180204\\_alphabet\\_10K.pdf?cache=11336e3](https://abc.xyz/investor/static/pdf/20180204_alphabet_10K.pdf?cache=11336e3), last accessed on 27 May 2020.

<sup>262</sup> 2018 Form 10-K, page 29.

The authors state that Google paid publishers “around 70.8% of the amount Google charges advertisers and ad buyers”.<sup>263</sup> That is a rather odd formulation. The 2018 Form 10-K makes no reference to ad buyers. In fact, it only says that Google reports as gross revenue the amounts “billed to [its] customers”,<sup>264</sup> and then reports as costs of revenue “amounts paid to Google Network Members”.<sup>265</sup> The term “customer” is not defined in the 2018 Form 10-K, but it seems that it refers to advertisers.<sup>266</sup>

The 2018 Form 10-K does not refer to Google charging ad buyers. The authors’ reference to “amounts Google charges advertisers and ad buyers” is thus peculiar. What is more, Google Ads is consistently mentioned throughout the Report as an “ad buyer” (as opposed to “advertiser”).<sup>267</sup> If the authors’ statement is to be taken at face value, it leaves open the possibility that in some cases the 70.8% figure is calculated on what the *ad buyer* (e.g., Google Ads) is charged, not on what the advertiser pays.

In any event, even if the authors’ statement is simply inaccurate like many other things in their paper, there are valid reasons to be concerned that the 2018 Form 10-K leaves Google considerable discretion to calculate its margin. That is the case for several reasons.

First, Google’s reporting does not break down its revenues between its ad tech products. That means that Google Ads, combined with Google Ad Manager, may in reality capture more than 30% of what the advertiser pays, to the extent that other ad tech products of Google charge lower fees so that in the aggregate an average figure of 30% is reached. It is important to note that Google was asked by the US House Judiciary Committee to break down its revenue between its ad tech products; it simply refused to do so, limiting itself to regurgitating information which was already available in its 2018 Form 10-K.<sup>268</sup>

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<sup>263</sup> Google Report, page 49 (emphasis added).

<sup>264</sup> 2018 Form 10-K, page 56.

<sup>265</sup> 2018 Form 10-K, page 57.

<sup>266</sup> 2018 Form 10-K, page 56: “Our customers generally purchase advertising inventory through Google Ads (formerly AdWords), Google Ad Manager as part of the Authorized Buyers marketplace (formerly DoubleClick AdExchange), and Google Marketing Platform (includes what was formerly DoubleClick Bid Manager), among others. We offer advertising on a cost-per-click basis, which means that an advertiser pays us only when a user clicks on an ad on Google properties or Google Network Members’ properties or when a user views certain YouTube engagement ads. For these customers, we recognize revenue each time a user clicks on the ad or when a user views the ad for a specified period of time. We also offer advertising on other bases such as cost-per-impression, which means an advertiser pays us based on the number of times their ads are displayed on Google properties or Google Network Members’ properties. For these customers, we recognize revenue each time an ad is displayed.” (emphasis added).

<sup>267</sup> See e.g., Google Report, page 22: “...ad buyers on AdX, such as Google Ads...”

<sup>268</sup> Google’s Submission In Response To Subcommittee Questions For The Record Following July 16, 2019 Hearing, *supra* footnote 256, pages 39-40 and pages 42-44.

Second, and most importantly, the 70%-30% discussion does not tell the full story. Page 56 of the 2018 Form 10-K discloses that Google reports TAC (the amount paid to Google Network Members) only if it considers that it acts as a “principal”. On the contrary, if Google considers that it acts as an “agent”, then it reports revenue on a net basis and does not report the amounts paid to Google Network Members:

“For ads placed on Google Network Members’ properties, we evaluate whether we are the principal (i.e., report revenues on a gross basis) or agent (i.e., report revenues on a net basis).”<sup>269</sup>

As we have noted elsewhere, it is not clear whether Google acts as a “principal” or an “agent” when it comes to ad intermediation. In its 2018 Form 10-K, Google reserves to itself the discretion to evaluate under which capacity it acts, which has profound reporting consequences.

Google argues that it “generally” reports revenue on a gross basis, i.e. it “generally” considers itself as a principal:

“Generally, we report advertising revenues for ads placed on Google Network Members’ properties on a gross basis, that is, the amounts billed to our customers are recorded as revenues, and amounts paid to Google Network Members are recorded as cost of revenues. Where we are the principal, we control the advertising inventory before it is transferred to our customers. Our control is evidenced by our sole ability to monetize the advertising inventory before it is transferred to our customers, and is further supported by us being primarily responsible to our customers and having a level of discretion in establishing pricing.”<sup>270</sup>

However, in its November 2019 response to the Questions for the Record from the US House Judiciary Committee, Google went at great lengths to portray itself as a mere “conduit” between publishers and advertisers, which does not engage in “*brokerage and trading activities*” and does not own the inventory transacted:

**“83. Please identify what duties Google Ads has towards advertisers when Google engages in brokerage and trading activities in the marketplace for digital ads.**

Google Ads is the buying interface through which advertisers can purchase Google’s owned and operated (O&O) and represented inventory. Google Ads is, primarily, Google’s storefront for this inventory, not a demand-side platform that facilitates real-time bidding and optimization across different sources of supply.

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<sup>269</sup> 2018 Form 10-K, page 56.

<sup>270</sup> 2018 Form 10-K, pages 56-57.

Google does not engage in “brokerage and trading activities” with respect to digital ads. Rather, Google’s ad tech products provide the infrastructure through which advertisers and publishers connect with one another, and execute the buying and selling strategies specified by advertisers and publishers, respectively.”<sup>271</sup>

**“84. Please identify and describe any contractual limitations or legal requirements that prevent Google Ads from buying ads for the minimum amount possible and selling them for the maximum amount possible.**

Google Ads does not buy ads or ad space; it is the interface Google provides for advertisers to buy Google’s owned-and-operated and AdSense inventory. That is, at no point does Google Ads hold third-party inventory it has purchased from publishers and then sell that ad space to advertisers. Google’s advertising technology solutions connect publishers with advertisers, with Google charging a fee to buyers, and taking a revenue share percentage from the amount paid to publishers. Google’s advertising technology solutions are designed to allow advertisers and publishers of all sizes to choose the right solutions for their businesses, making it even easier for them to deliver valuable, trustworthy ads and the right experiences for consumers across devices and channels.”<sup>272</sup>

**“88. Does Google Ads ever purchase third-party ad inventory through non-Google platforms? If yes, please describe the relevant circumstances.**

Google Ads does not itself purchase third-party ad inventory; however, advertisers can use Google Ads to purchase third-party ad inventory through the Google Display Network or through third-party exchanges.”<sup>273</sup>

We find it hard to reconcile the above responses to the US Congress with the notion in the 2018 Form 10-K that Google acts as the “principal” that controls the advertising inventory before it is transferred to its customers. If Google’s response to the House Judiciary Committee is accurate and not misleading, then Google may well be an “agent” – at least insofar Google Ads is concerned. In such a case Google could keep more than 30% of what the advertiser spends. The issue may be clarified with the appropriate questions asked by regulators.

Finally, any reference to third-party reports indicating that a 30% retention rate is in line with industry average is irrelevant, for the simple reason we are not sure that the 30% includes Google Ads’ margin, as explained above. In addition, the CMA never suggested that “*Google is in step with industry averages*” and the authors’ relevant statement is plainly misleading.<sup>274</sup>

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<sup>271</sup> Google’s Submission In Response To Subcommittee Questions For The Record Following July 16, 2019 Hearing, *supra* footnote 256, pages 49-50 (emphasis added).

<sup>272</sup> *Id.*, page 50 (emphasis added).

<sup>273</sup> *Id.*, pages 51-52 (emphasis added).

<sup>274</sup> Google Report, page 50 (internal citation mitted).

Quite the contrary, the CMA observed that sequential auctions may enable actors to engage in “arbitrage” and charge hidden fees:

“In the context of an intermediation process characterised by the presence of sequential auctions, lack of transparency may give rise to rent -seeking behaviour and arbitrage opportunities, ie the possibility for an intermediary (SSP or DSP) to buy impressions at one price and sell them at a higher one, without its customers being aware of this ‘hidden fee’.”<sup>275</sup>

The CMA observed that Google Ads in particular may engage in this practice:

“A similar concern was expressed in relation to Google Ads. Google Ads, which in the open display market operates as a DSP, runs an internal second-price auction among advertisers. While the winning bidder is charged by Google Ads an amount corresponding to the second-highest bid received by Google Ads, the amount that Google Ads bids into SSPs may be different, as Google Ads optimises the bid to achieve a high probability of winning the impression without overpaying for it. Some publishers have expressed their concern that the difference between what advertisers pay and what publishers receive from Google Ads may be substantial. This could be the case, for example, if Google Ads’ internal auction were ‘thicker’ than the subsequent auction, or if advertisers using Google Ads had higher value for the inventory, owing to superior targeting capabilities allowed by the use of Google’s data. Google has provided us an initial estimate of the difference. We will investigate this further in the second part of the study.”<sup>276</sup>

The CMA also observed how some publishers expressed concerns that the introduction of the Unified Pricing Rules may “*reduce their ability to respond to what they perceive as the capture of significant rents by intermediaries.*”<sup>277</sup>

In the third place, the authors argue that Google Ads charging a fee for its service is not related to Google’s vertical integration and point to the fact that “[*m*]any non-vertically integrated ad buyers first run an internal auction-like process for advertisers, and then bid into an ad exchange”.<sup>278</sup>

This argument is deeply flawed. While there are other ad buyers that, like Google Ads, run an internal auction among advertisers, this is irrelevant. In our first paper we had observed that

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<sup>275</sup> CMA Interim Report, paragraph 5.193.

<sup>276</sup> *Id.*, paragraph 5.195.

<sup>277</sup> *Id.*, paragraph 5.196.

<sup>278</sup> Google Report, page 50.

other players could also engage in arbitrage practices similar to that of Google Ads.<sup>279</sup> That does not justify Google Ads charging a hidden margin. In addition, we think the vertical integration of Google Ads with AdX (and by extension DFP) is in reality closely linked with Google Ads' ability to extract a higher margin; if Google Ads was owned and operated by a different company, it could probably still engage in arbitrage to extract a margin, but at a much lower scale. Google is able to extract a high margin precisely because of its vertical integration because the margin available to Google is maximized when two conditions are met: *first*, Google Ads is able to solicit a higher bid from its advertisers compared to other DSPs; and *second*, Google Ads can secure impressions at a lower price. Google's vertical integration is key to both, as it creates asymmetry of information among ad buyers, with Google Ads having superior information compared to other ad buyers.

As to the first condition, it is highly likely that Google Ads can solicit higher bids from advertisers compared to other ad buyers. The Google Ads advertisers' higher willingness to pay is probably due to the fact that (i) Google Ads taps into Google's vast pool of user data (since 2012 Google may combine data across its services and since 2016 it may associate otherwise anonymous browsing data with Google accounts);<sup>280</sup> (ii) Google Ads operates on the same infrastructure as AdX, to the effect that there are minimal cookie match loss rates (while competitors have to perform cookie syncing to identify the user, which is inefficient and may result to loss rates up to 60%);<sup>281</sup> and (iii) Google Ads may use default settings to steer advertiser demand initially targeted to search inventory to display inventory, thus creating artificial competition for display.<sup>282</sup> If there is a player that can identify high-value impressions (e.g., where the user is identified as likely to click an ad etc.), that is most certainly Google Ads.

As to the second condition, Google Ads can take advantage of the large volume of auction data Google has (in its capacity as AdX and / or DFP) and the "minimum bid to win" information to train intelligent algorithms and predict with a high level of precision when it is able to secure an impression at a low price, e.g., because other ad buyers are unlikely to bid or are most likely to bid low. Again, this would be impossible if Google Ads was operated by a different

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<sup>279</sup> Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, *supra* footnote 3, page 86: "...*industry commentators have also identified a particular feature of programmatic advertising that could be used by intermediaries to engage in arbitrage and thus exploit publishers and advertisers, which is the existence of consecutive second-price auctions.*"

<sup>280</sup> Julia Angwin, "Google Has Quietly Dropped Ban on Personally Identifiable Web Tracking", *ProPublica*, 21 October 2016, available at <https://www.propublica.org/article/google-has-quietly-dropped-ban-on-personally-identifiable-web-tracking>.

<sup>281</sup> <https://support.google.com/admanager/answer/7014770?hl=en>, last accessed on 27 May 2020.

<sup>282</sup> D. Pratt, "7 Default Settings in AdWords that Lower Your ROI", *AdHawk*, 18 June 2018, available at <https://blog.tryadhawk.com/google-adwords/4-default-settings-in-adwords-that-lower-your-roi/>.

company. In addition, the Unified Pricing Rules which Google imposes on publishers may help Google Ads secure inventory at a lower price, as buyer-specific floors are no longer allowed.

To put it in a nutshell, there are several reasons why Google's vertical integration is key to Google Ads' ability to extract high margins.

In the fourth place, the authors argue that there is nothing anti-competitive in Google charging both a buy-side and a sell-side margin, and refer to players such as Criteo and The Trade Desk that charge buy-side fees and players such as PubMatic and Rubicon Project that charge sell-side fees.<sup>283</sup> If anything, the authors argue, Google's vertical integration may result in lower overall fees.<sup>284</sup> This argument is equally irrelevant. Google should disclose Google Ads' margin and explain under which capacity it acts ("principal" or "agent"). At the very least, Google should ensure consistency between its various public statements to regulators and authorities (see e.g., Google's response to the US Congress according to which Google Ads is free for advertisers). Such inconsistencies reduce Google's credibility as an interlocutor, to say the least.

In conclusion, not only have the authors not challenged our position on Google's hidden margin (visible to neither publishers nor advertisers); they have also made important admissions and statements that contradict various Google's statements to regulators.

## **V. Conclusions**

Our ad tech papers are the outcome of extensive research of publicly available sources and multiple interviews with ad tech experts. Based on such research, we expressed legitimate concerns over several practices of Google, the largest and most likely dominant ad tech vendor, and their effects on competition. In particular, we explained how Google throughout the years seems to have used its dominant ad server for publishers to favor its own ad exchange to the detriment of rivals. DFP's unfair and inefficient waterfall setup eventually spurred the adoption of header bidding, which nevertheless could not reach its full potential. By refusing to participate in header bidding, Google made switching to an alternative ad server costly for its customers and thus shielded DFP from competition. Google's "alternative" to header bidding, namely Open Bidding, suffers from a lack of transparency, and is conveniently run on Google's own servers, with Google collecting the bidding data of its rivals while also charging a non-negligible fee on top. In 2019, Google paid lip service to calls for greater "fairness" and "transparency" by transitioning Google Ad Manager to a Unified Auction, which presents all

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<sup>283</sup> Google Report, page 50.

<sup>284</sup> Google Report, page 50.

the drawbacks of Open Bidding, while introducing new problems, such as the Unified Pricing Rules.

At the same time, we have explained how Google may take advantage of Google Ads' internal auction, its vertical integration and the opacity of its services to extract an additional margin, unbeknownst to the publisher and the advertiser. Google's transition to a Unified Auction has done nothing to remove such ability to extract a hidden margin. On the contrary, it may have even enlarged the margin available to Google Ads.

As we have showed in this reply, the authors avoid responding to many of our concerns – and when they do respond, they put forward thin arguments that do not stand to critical analysis. Worse, the authors regularly misrepresent our arguments, such as when it comes to “last look” and the Unified Pricing Rules. Considering the weakness of the authors' arguments, we are hardly surprised that they try to fudge the thorniest issues. Following a well-known Google strategy to avoid addressing criticism, they try to deflect the reader's attention by painting a rosy picture of the market. Yet scratching a little beneath the surface suffices to realize that this rosy picture is nothing more but an illusion, which the authors create by referring to irrelevant companies or fringe competitors as significant players that constraint Google, the very moment the CMA has found market shares of up to 90%.

Yet what we find most disappointing – and alarming – about the Google Report is how it exposes Google's unreliability. By not hesitating to modify without notice a public blog post after more than six months (and after the blog post author's departure from the company) in order to serve its arguments and rebut critics, Google managed to severely harm its own credibility. We wonder what else Google may have modified to serve itself. If that was not enough, Google delivered another blow to its own credibility by commissioning a report whereby the discussion of Google Ads' margin is very hard to reconcile with Google's public statements to the US Congress, and which creates even more confusion. The time has now come for regulators to finally pierce the mystery and ask Google the appropriate questions.

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## ANNEX

This Annex includes several questions which the ACCC or other regulators might wish to ask Google to address in a precise and non-evasive manner.

For the purposes of this questionnaire, any reference to “Google Ads margin” or “margin captured by Google Ads” means any amount/percentage of ad spend which Google Ads captures and which is not provided to the publisher, be it in the form of a reward earned for making the CPC-to-CPM conversion or audience targeting fees or that arises as a result of the difference between the price charged to the winning Google Ads advertiser and the price that Google Ads pays when it wins an impression.

1. Identify all the instances where you consider you are an agent according to your Form 10-K (i.e., report revenues on a net basis) for ads placed on Google Network Members’ properties. Provide separate answers for each of your ad tech products, including but not limited to: Google Ad Manager (DFP), Google Ad Manager (AdX), AdSense, DV360, Google Ads and Campaign Manager.
2. Identify how and where exactly the Google Ads margin is reported in your Form 10-K. Explain whether the Google Ads margin is billed to advertisers using Google Ads.
3. Reconcile the statement that Google Ads earns a margin in the report authored by Daniel S. Bitton and Stephen Lewis with your November 2019 response to question 65 from Questions for the Record from the US House Committee on the Judiciary, where you state among others that “*[a]dvertisers placing ads through Google Ads do not pay any fees*”.
4. Express the Google Ads margin as a percentage of advertiser spend. Provide impression-level data on a random sample of [number] impressions won by Google Ads selected over the course of certain dates. For each impression provide the following data: (a) the advertisers’ winning bid; (b) the price charged to the winning advertiser; (c) the CPC-to-CPM conversion that you applies to convert CPC original bids by advertisers into CPM bids used on AdX and the corresponding estimated Click-Through Rate (CTR); (d) the actual Click-Through Rate (CTR); and (e) the net amount paid to the publisher.
5. Explain whether the 70.8% TAC, as reported in your Form 10-K for the fiscal year ended in 31 December 2018, includes any margin captured by Google Ads.
6. Assume an advertiser spends \$ 1 on Google Ads to purchase an impression from a publisher that uses Google Ad Manager as its ad server and ad exchange. Identify all

amounts debited from the \$ 1 at each step of the chain, from the advertiser to the publisher.

7. Reconcile the statement in you Form 10-K that for ads placed on Google Network Members' properties, you generally consider you are the principal (i.e., report revenues on a gross basis) with your responses to questions 83, 84 and 88 from the Questions for the Record from the US House Committee on the Judiciary, where you state, among others, that *“Google does not engage in “brokerage and trading activities” with respect to digital ads”* and that *“Google Ads does not buy ads or ad space [...]at no point does Google Ads hold third-party inventory it has purchased from publishers and then sell that ad space to advertisers”*.
8. Explain the process whereby ad spend from advertisers using Google Ads or DV360 is allocated between Google's owned and operated properties and Google Network Member properties. Explain the criteria you use for making such allocation. Provide separate answers for Google Ads and DV360.
9. Explain whether Google Ads advertiser quality scores are transparent to publishers. Explain whether there is any mechanism whereby publishers can see which Google Ads advertisers were willing to bid at what levels, and understand why Google selected specific ads to be placed on their properties.
10. Provide a detailed timeline of the introduction and evolution of the Dynamic Allocation feature. In particular, identify the point in time when Dynamic Allocation was first rolled out and used by publishers. Provide a timeline showing the adoption of Dynamic Allocation from publishers using DFP and how such adoption evolved throughout the years ever since Dynamic Allocation was first rolled out. Provide a timeline of all the changes you made to Dynamic Allocation and how these were rolled out on publishers using DFP. Explain whether at some point in time Dynamic Allocation became a mandatory feature. Explain what happens if a publisher disables Dynamic Allocation. Differentiate your answer according to whether the effects were different at some point in time.
11. Explain what measures you have taken in Open Bidding to address the issue of data leakage and how these measures are better compared to measures taken in client-side or other server-side header bidding solutions.
12. Provide data on the percentage of times a single DSP bidding on an impression made available in Open Bidding is both the highest bidder and the second-highest bidder.

13. Explain what measures you have taken in Open Bidding to address the issue of advertiser self-competition.
14. Explain why you did not make AdX demand available on alternative server-side header bidding solutions (e.g., Prebid Server, Amazon TAM).
15. Provide data on a monthly basis for the period starting January 2016 and until September 2019 on the number of impressions (as an absolute number and as a percentage of the overall impressions made available on AdX) that Google Ads or DV360 won slightly above the bid submitted from a header bidding demand partner, whereby such bid from the header bidding demand partner would have otherwise won the impression (the “winning header bidding bid”). For the purposes of this question, “slightly above” means that the difference between the price that Google Ads or DV360 paid and the winning header bidding bid does not exceed [0.01 – 0.10] CPM. Provide data separately for Google Ads and DV360.
16. Provide data on a monthly basis for the period starting October 2019 and until May 2020 on the number of impressions (as an absolute number and as a percentage of the total number of impressions available in the Unified Auction) that Google Ads or DV360 won slightly above the floor price. For the purposes of this question, “slightly above” means that the difference between the price Google Ads or DV360 paid and the floor does not exceed [0.01 – 0.10] CPM. Provide data separately for Google Ads and DV360.
17. Identify all the instances where you have used Data to create a segment of users whose criterion/criteria for creation include(s), but is/are not limited to, that such users are End Users of the Target Properties, for the purpose of targeting advertising to such segment of Target Property End Users, where such use of Data is not made on Company’s behalf and Company has not consented to such use via the Google Ad Manager user interface or otherwise. The terms “Data”, “End Users”, “Target Properties” and “Company” have the meaning set forth in Google Platform Services Terms and Conditions, available at [https://www.google.com/intl/en\\_US/doubleclick/platform/terms.html](https://www.google.com/intl/en_US/doubleclick/platform/terms.html) (version November 2018).