

News Corp Australia

**SUBMISSION TO THE
AUSTRALIAN COMPETITION AND
CONSUMER COMMISSION**

AD TECH INQUIRY
ISSUES PAPER

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Executive Summary

This inquiry into markets for the supply of digital advertising technology services and digital advertising agency services (the **Ad Tech Inquiry**) is of fundamental importance to the future of online advertising. News Corp Australia welcomes the opportunity to respond to the ACCC's Ad Tech Inquiry Issues Paper dated 10 March 2020 (**Issues Paper**).¹ In this submission, News Corp Australia outlines why competition in the ad tech supply chain is failing, and the resulting impact on publishers, advertisers, ad tech suppliers and consumers. News Corp Australia outlines who are the actors, how the supply chain works and what News Corp Australia has experienced and observed as evidence of competition failings.

In particular, News Corp Australia is concerned with the presence and market power of Google within all parts of the ad tech supply chain, and the behaviour of Google in reinforcing its market power through behaviour such as tying, self-preferencing, predatory pricing, opacity, refusal to supply, restrictive terms and conditions of its services, limiting capabilities and interoperability. This behaviour has raised barriers to entry for other firms to enter and compete in the relevant markets.

The impacts of the competitive failings of the ad tech supply chain are multiple.

The impact on publishers

Publishers create the content and advertising space that is the linchpin of the ad tech supply chain. The ability of publishers to monetise their businesses is significantly undermined as a direct result of the complex, opaque and uncompetitive nature of the ad tech supply chain.

As a larger publisher, News Corp Australia is in a better position than many smaller publishers to undertake direct advertising deals for premium advertising inventory and manage programmatic advertising revenues through dedicated teams. This is often not available to smaller publishers. However, despite this, News Corp Australia increasingly finds its advertising revenues under pressure.

While News Corp Australia has been impacted by these behaviours, smaller publishers and new entrants may be even more affected as they are unable to devote the same resources that News Corp Australia has to attempt to maximise advertising revenues. Indeed, the only advertising channel available to the majority of publishers seeking to monetise their own sites is the programmatic one dominated by Google. These smaller publishers suffer disproportionately from an inability to diversify their revenues and the impacts of failing competition in the programmatic advertising supply chain.

The impact on advertisers

The competitive failings of the ad tech supply chain also affect advertisers by lowering returns for publishers without providing advertisers with commensurate compensation or value. Rather, in News Corp Australia's view, Google has exploited its position of dominance to maximise its own profits. It is also News Corp Australia's view that remedying the ad tech supply chain to address Google's overwhelming market power will not compromise the lowered costs seen by some advertisers using programmatic channels. Further, the foreclosure effect of Google's conduct has also impacted the development of innovative advertising solutions.

¹ This response addresses our concerns relating to ad tech only and not other issues raised in our responses to the ACCC's Digital Platforms Inquiry such as the ranking and display of news content by digital platforms.

The impact on other ad tech suppliers

There have been many suppliers who have come and gone, including substantial companies like Microsoft and Facebook. These companies have been unable to effectively compete with Google.

The impact on consumers

Ultimately, the lack of competitiveness of the ad tech supply chain impacts on consumers in terms of lower quality content and higher prices for content and advertised goods. In News Corp Australia's submissions to the ACCC's Digital Platform Inquiry, we outlined the pressure that publishers have come under as a result of declining advertising revenues. Advertising revenue sustains content, including journalistic content, which the ACCC has recognised as critical for a functioning democracy.² Further, advertisers paying more for advertising than they would do in a competitive market may mean those prices are passed on to consumers.

This submission is structured as follows:

- in **Part A**, we summarise why in News Corp Australia's view, competition in the ad tech supply chain is failing; and
- in **Part B**, we respond to a number of the questions set out by the ACCC in its Issues Paper, explaining in more detail the mechanics of the ad tech supply chain.³

We also include the following appendices:

- **Appendix 1** – Timeline
- **Appendix 2** – Glossary
- **Appendix 3** – Brian O'Kelley Testimony
- **Appendix 4** – ISBA (UK) *Programmatic Supply Chain Transparency Study, Executive Summary* (May 2020)
- **Appendix 5** – [REDACTED]
- **Appendix 6** [REDACTED]

² ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, section 6.11.5.

³ We do not respond to questions in the Issues Paper which relate specifically to advertisers and ad agency services.

Part A: Why competition in the ad tech supply chain is failing

1 Introduction

Digital advertising has now evolved into a major business, with total revenue for the industry in Australia totalling \$9.3 billion in 2019.⁴

Advertising technology services, commonly referred to as 'ad tech', offer an opportunity for publishers to offer advertisers and, consequently, consumers, with advertising opportunities tailored to products and services that individual consumers are likely to be interested in. Ad tech serves ads in real time on publishers' websites, taking into account various user data metrics. Ad tech vendors provide the ability for advertisers and publishers to measure the effectiveness of digital advertising campaigns.

The ad tech industry has emerged and developed in a relatively short period of time – mirroring the emergence and expansion of internet-based services globally – and delivers an important service through its supply chain. However, the ad tech supply chain has quickly become complex and opaque in nature. Google is the leading ad tech services provider across all levels of the supply chain. In News Corp Australia's view, the complexity and opacity of these markets provides Google with the scope and incentives to engage in conduct which has the potential to distort competition.

This submission outlines a number of issues that News Corp Australia considers face the ad tech industry. It is important that the ad tech supply chain functions effectively and remains competitive for publishers, advertisers, ad tech service providers and consumers alike.

This **Part A** of News Corp Australia's submission:

- **first**, provides an overview of the development and structure of the ad tech supply chain;
- **second**, sets out different markets that could be used by the ACCC in its analysis;
- **third**, provides an overview of the different players in the ad tech supply chain; and
- **fourth**, provides a broad overview of the key competition issues in the ad tech supply chain based on News Corp Australia's experience.

2 Overview: development and structure of the ad tech supply chain

2.1 Background on digital advertising

In recent years, there has been a major shift in advertising revenue away from traditional media to online. A recent study shows that spending on online advertising in Australia reached \$9.3 billion in 2019, which represents growth of 13.9% since 2014. This general trend is also evident in News Corp Australia's own revenue trends. Since 2015, News Corp Australia's digital revenue as a share of total advertising revenue has ██████████ from █% in FY2015 to █% in FY2018. Moreover, the share of programmatic advertising as a proportion of digital advertising has ██████████ from █% in FY2015 to █% in FY2018.

As outlined above, the key actor in the digital advertising process is the publisher. It is the publisher which invests in the creation of content, such as news, opinion, editorial and other journalistic content,

⁴ ██████████

which sparks and holds the attention of the reader. Everything else in the digital advertising ecosystem follows from the relationship between the publisher and the reader. It is the reader's attention which the advertiser is hoping to secure. The publishers then offer for sale ad space (also known as inventory) on their own websites where advertisements are placed, and receive money from advertisers for the advertising displayed on these spaces.

Besides the publisher and the reader, the other participants in digital advertising include the following categories of service providers:⁵

- **Advertisers** which pay for advertising;
- **Advertising agencies** which develop the content of ads and arrange for their distribution through different media;
- **Ad tech businesses** which mediate the delivery of advertising with digital technology; and
- **Online platforms**, including search engines, video-sharing and social media platforms, which aggregate content for users. Some online platforms receive advertising revenue as both media owners and by providing ad tech services. These platforms also collect data about the use of their platforms.

2.2 Display advertising

Digital advertising has two broad forms – search advertising and display advertising as follows:

- **Search advertising** refers to ads that appear alongside results of a query entered into search engine (e.g. Google Search Engine Results Pages (**SERP**)). Advertisers bid on keywords so that their ad is shown when the user enters this term into the search engine.
- **Display advertising** is closer to traditional offline advertising. It consists of banners displayed on websites or mobile applications.

Display advertising is said to be more suitable than search advertising for the purpose of raising 'brand awareness' among consumers. [REDACTED]

A distinction can be made between display advertising purchased and placed on the open web and those ads placed on sites that limit interoperability with open web advertising, known as 'walled gardens'.⁷ Further explanation about the two different types of display advertising are set out below.

- **Walled gardens** are firms that limit interoperability across their products and services. For example, Facebook limits the interoperability of its social media platforms on a number of fronts including for users (e.g. friends on Facebook cannot be contacted from another social media platform and vice-versa) and for advertisers (which cannot transport information of their

⁵ House of Lords Select Committee on Communications, 1st Report of Session 2017 -19, UK Advertising in a digital age, 11 April 2018, <<https://publications.parliament.uk/pa/ld201719/ldselect/ldcomuni/116/116.pdf>>, page 8.

⁷ Competition and Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>, page 178, paras 5.101-5.104.

advertising campaigns to other non-Facebook platforms).⁸ Other walled gardens include YouTube (owned by Google), Twitter, Snapchat (owned by Snap) and Amazon. Walled gardens primarily allow advertisers to buy *first-party* display inventory (i.e. advertising space on their own platforms) and advertisers must use these companies' own ad tech solutions to measure conversions and attribution of those ads. Another common characteristic of walled gardens is that they possess vast troves of high quality user data, which is used to facilitate targeted advertising on their own sites. However, this data is not made readily available to advertisers or other publishers.

- **Open web advertising** consists of advertising inventory on the broader internet, which is bought and sold via third-party platforms. Advertisers use ad tech tools to buy *third-party* display inventory (i.e. not belonging to the ad tech service providers). Ad tech service providers are engaged to facilitate the sale of advertising inventory by publishers to advertisers. The role of ad tech service providers in programmatic advertising is discussed below in **section 2.3**. A substantial part of the advertising budget relating to open web advertising is absorbed by ad tech service providers instead of flowing directly from advertisers to publishers (the so-called 'ad tech tax').

2.3 Programmatic advertising

In this submission we use the term 'programmatic advertising' to refer to advertisements on publishers' websites which are bought and sold using the ad tech supply chain and where a deal is struck for the display of that advertising as a result of a real time bidding auction. The ad tech supply chain and programmatic advertising have developed very quickly in the last 10-20 years. Some forms of online advertising on publishers' websites are executed using tools from the programmatic or ad tech supply chain but without using a real time bidding auction, which we explain further below.

At its inception in the 1990s, online display advertising was bought and sold through direct dealings between publishers and advertisers. Generally, advertisers ordered advertising impressions in bulk in advance, with media owners fulfilling these orders as audiences visited their sites and generated advertising impressions (i.e. when an advertisement is displayed on a website). As the online advertising market grew, ad tech firms developed solutions to enable publishers to sell advertising inventory automatically, on an impression-by-impression basis, as and when impressions were created or in advance – this was termed programmatic trading.

Originally, programmatic trading was used solely for unsold or lower value inventory. However, a growing proportion of digital advertising is now bought and sold programmatically. In News Corp Australia's view, one of the reasons for this, as discussed below, is that Google's conduct across the ad tech supply chain has had the effect of weakening direct sales channels and thereby steered advertisers towards programmatic channels to obtain premium inventory.

This trend towards programmatic advertising is evident in News Corp Australia's business where programmatic advertising revenues generated using RTB through ad exchanges have as a proportion of all digital advertising sources have ██████████, growing from ██████% in FY2015 to ██████% in FY2018.

⁸Please note that Facebook has plans to integrate Instagram, WhatsApp and Facebook Messenger. See, eg, 'A privacy focused vision for social networking', 6 March 2019, <<https://www.facebook.com/notes/mark-zuckerberg/a-privacy-focused-vision-for-social-networking/10156700570096634/>>.

This is illustrated in [REDACTED] below. In News Corp Australia's view this upward trend is likely to continue into the future. Further, other smaller publishers are likely to have an even greater reliance on programmatic advertising. In Australia in 2019, [REDACTED]

[REDACTED].⁹ The proportion of inventory purchased programmatically is therefore already clearly significant and growing. This is exacerbated by the effect of Google's conduct in weakening direct sales channels: see more in **section 5.1(c)** below. Accordingly, the impact of failings in the programmatic advertising channel will continue to have a significant impact given the increasing importance of this revenue channel in the future.

[REDACTED]

While programmatic advertising can include, but is not necessarily limited to, trading that uses real time bidding auctions, as noted above, in this submission we use the term 'programmatic advertising' to refer to sales that are executed through real time bidding auctions. Programmatic advertising has generated a plethora of new business models to monetise content and services, contributing to its characteristic complexity and opacity.

The main features of programmatic trading include:¹⁰

- **Automation:** although advertisers and media agencies still use manual processes to define advertising strategy, develop plans and manage media buying, the execution of trading with publishers is automated.
- **Targeting:** in many instances, intermediaries leverage multiple data sources, matched with user ID data provided by the publisher, to assess advertising impressions and provide advertisers with targeting options and/or campaign optimisation services.
- **Aggregation:** intermediaries connect multiple buyers (advertisers/media agencies) with multiple sellers (publishers), allowing each to reach supply and demand sources that would not be economic to access through manual trading.

⁹ [REDACTED]

¹⁰ IAB, The Programmatic Handbook, 2014, <<https://www.iabuk.com/sites/default/files/The%20Programmatic%20Handbook.pdf>>.

- **Bidding:** in many cases, intermediaries facilitate bidding in auctions, which may be public or private and may involve pre-agreed terms.

There are currently two main methods of buying and selling online display advertising on a publisher's own website – either through direct sales or indirectly through an open exchange using real time bidding (**RTB**). Both of these methods make use of ad tech services or tools:¹¹

- **Direct sales** have traditionally taken place 'offline' through in-person negotiations between advertisers and publishers. Today, 'direct deals' also refers to agreements entered into directly between publishers and advertisers (or their agents), however, today those deals will in practice be executed using services or tools from the programmatic ad tech supply chain. For example, publishers will use a publisher ad server to manage inventory and advertisers will load their creative advertisements onto an advertiser ad server. This is depicted as **channel 1** in **Figure 2 below**. Direct sales can also involve auction mechanisms,¹² but are not usually executed using RTB. Accordingly, in this submission we use the term 'direct sales' or 'direct deals' to refer to those advertisements placed on publishers' websites as a result of a direct negotiations, albeit these may be served or satisfied using components from the ad tech supply chain, but not RTBs. For a more detailed description, please see the response in **question 28** below.
- **Indirect sales**, also known as 'open market' selling, and referred to in this submission as **programmatic advertising** involves buying and selling advertising inventory through advertising exchanges involving RTB. This may or may not involve buying and selling through ad networks. The bidding processes, auction rules and exchanges can vary depending upon the desired medium, channel or product. Indirect sales channels (either with or without ad networks), are depicted in **Figure 2 below** and are represented as **channel 2** and **channel 3**.

2.4 Programmatic display ad tech chain

The **programmatic display ad tech supply chain** refers to the actors and service providers that enable the sale of inventory by publishers to advertisers programmatically, which today use RTB auctions. The different types of key actors and service providers in the programmatic display ad tech supply chain are described below.

- **Publishers produce content.** Publishers own the websites and mobile apps that consumers visit, and sell ad inventory (i.e. space to host ads) on these digital properties to advertisers. Efficient management of ad inventory is needed for publishers to maximise profits. For example, News Corp Australia is a publisher and offers inventory on, for example, news.com.au.
- **Publisher ad servers are tools that publishers use to manage their inventory.** A publisher ad server stores a publisher's ad inventory and records criteria about how the publisher wants to manage and fill their ad spaces.

¹¹ The ad tech industry commonly uses the term 'programmatic' to refer to indirect sales / exchanges and the term 'direct' to refer to direct sales. IAB Australia The Programmatic Playbook: A Guide to Programmatic Advertising for the Buy and Sell Sides, October 2017, <https://iabaustralia.com.au/index.php?option=com_cobalt&task=files.download&tmpl=component&id=2304&fid=186&fidx=1&rid=2395&ret urn=aHR0cHM6Ly9pYWJhdXN0cmFsaWEuY29tLmF1L2dibmVyYWwtY29udGVudC9pdGVtLzI4LWdlbmVyYWwtY29udGVudC8yMzk1LW11LWRIY2tzLTl%3D>.

¹² See explanation in relation to private marketplaces (or **PMPs**) in response to Question 28 below.

- **Advertiser ad servers are tools that advertisers use to manage their ad campaigns.** An advertiser ad server gives an advertiser a central place to manage the creative content for their digital ad campaigns and track where their ads are being served.
- **Demand side platforms (DSPs) bid on and purchase** ad inventories on behalf of advertisers.
- **Ad exchanges are digital marketplaces for selling ad inventory.** In an ad exchange, ad inventory is supplied by publishers and advertisers bid on this inventory through DSPs. Bidding occurs in real time.
- **Ad networks pool ad inventories from a large number of publishers and then resell to advertisers.** Ad networks originally emerged to help publishers sell their unsold inventory. Ad networks can buy and sell directly, buy and sell inventory on ad exchanges, or some combination of both. Since the rise of exchanges, ad networks have become less relevant for publishers. Many have also expressed concerns with ad networks' lack of transparency.¹³
- **Advertisers buy ad inventory to display their ads to consumers on publishers' pages.** An example of an advertiser is a car manufacturer.

Figure 2: Direct and indirect buying channels in programmatic advertising

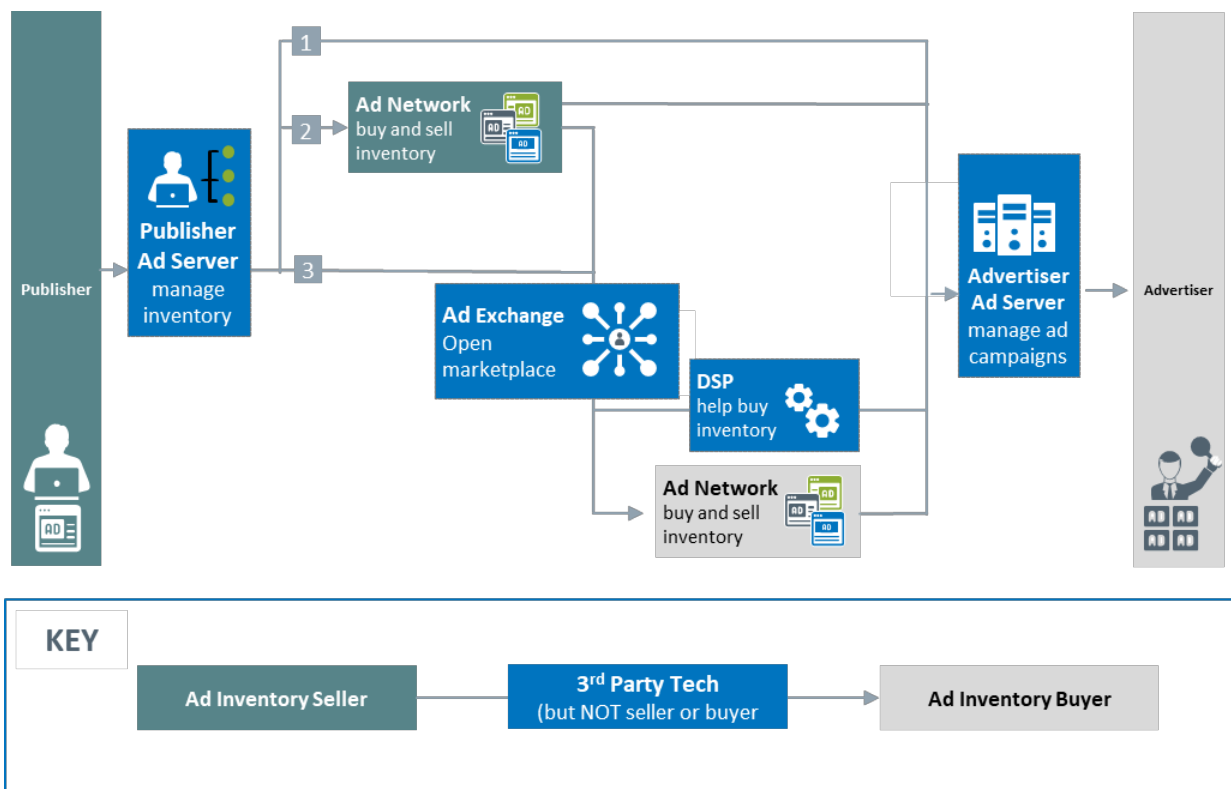


Figure 2 above illustrates at a high level the major channels for selling online display advertising on publishers' websites. However it does not illustrate the complexity behind the typical process for

¹³ Ronan Shields, The Decline of the Ad Network, ExchangeWire, 29 June 2015, <<https://www.exchangewire.com/blog/2015/06/29/the-decline-of-the-ad-network/>>.

allocating a publisher's inventory across those channels.¹⁴ As will be discussed in greater detail below, this often involves multiple levels of auctions and some companies, particularly Google, own products at different points along the ad tech supply chain.

Box 1: Steps in programmatic advertising¹⁵

Programmatic advertising generally occurs through the following broad sequence of events:

1. Publishers make their inventory available to ad exchanges.
2. Advertisers decide roughly which audiences they want to target with their ads (this could be based on their existing audience data such as existing website visitors, act alike audiences of existing customers, and/or demographics).
3. An individual user visits a webpage. As the webpage loads, information about the individual and the content of the page is gathered from 'cookies' (see **Box 5** on **page 58** for more details on cookies) or from an online service provider with which the individual holds an account. GPS technology may also provide information about the individual's geographical location. All of this information is incorporated into a 'bid request'.
4. The bid request is sent to the ad exchange. Algorithms process the information to make inferences about the individual's characteristics such as age, income and interests.
5. The ad exchange receives the request, either through the publisher ad server or the browser in the case of header bidding. The ad exchange then sends its own bid request to connected DSPs. These DSPs then bid on behalf of advertisers.
6. If the information about the user matches the targeting characteristics defined by the advertiser, the advertiser is entered into an auction with other advertisers whose targeting criteria also match that particular user.
7. The ad exchange runs an auction which may be first-price or second-price. Whichever advertiser has the highest bid wins the right to display their advertising to the individual during the visit to the webpage.
8. Publishers get paid for the advertising they show on their sites.

Steps 3 to 7 occur in milliseconds.

In the Issues Paper the ACCC states that it considers supply-side platforms (also known as **SSPs**) to be key suppliers of ad tech services. The term SSP is now used interchangeably with the term 'ad exchanges' since SSPs are no longer necessary standalone services in the ad tech supply chain. SSPs came into existence in the late 2000s to help publishers optimise their use of ad networks to improve their revenues. SSPs later allowed publishers to circumvent interoperability issues with Google's ad tech services. Essentially, publishers could use SSPs as a singular repository for selling their excess inventory through ad networks. However, since the rise of synchronous (i.e. real time) bidding by multiple exchanges (including through Google's ad exchange AdX), SSPs provide less utility for publishers. There has consequently been some convergence between SSPs and ad exchanges, such that publishers today use the term 'SSP' interchangeably with the term 'ad exchange.' For example, Rubicon currently operates an ad exchange and it previously had ad network optimisation (i.e. SSP) capabilities that it no

¹⁴ In addition, for simplicity, the diagram leaves out data management platforms, tools that advertisers use to collect first-party and third-party data and use that data to better target audience segments through DSPs. See Bluekai, Data Management Platforms Demystified, <http://www.bluekai.com/files/DMP_Demystified_Whitepaper_BlueKai.pdf>.

¹⁵ House of Lords Select Committee on Communications, 1st Report of Session 2017 -19: UK Advertising in a digital age, 11 April 2018, <<https://publications.parliament.uk/pa/ld201719/ldselect/ldcomuni/116/116.pdf>>, page 13.

longer offers separately. Despite this, many publishers still refer to Rubicon as an SSP not an ad exchange.

3 Relevant markets

It is worth analysing the competitiveness of the services involved in ad tech in the context of the relevant markets for ad tech services. Ultimately, irrespective of the precise scope the market adopted, News Corp Australia considers that that Google has market power in relation to the supply of ad tech services, and narrower segments therein, and exercises that market power with the purpose or effect of substantially lessening competition in the supply of ad tech services, including in narrower segments of that broader market.

Defining the scope of the market is not without difficulty: the ad tech industry is complex and Google's conduct spans multiple strands of the industry. The integration of Google's ad tech services makes it difficult to conduct a 'siloe'd' analysis of the impact of Google's conduct and platforms in the different markets for ad tech services. Moreover, taking a technical approach to market definition may not assist in a proper and factual analysis of the real issues and conduct in question.

With this in mind, and while we are conscious of the complexity of digital and programmatic advertising services, News Corp Australia offers the following thoughts on the appropriate scope of the product market for ad tech services.

Market definition

News Corp Australia considers the scope of the relevant markets to be the market for the **supply of ad tech services** in Australia, which can be further segmented into the following markets:

- the market for the **supply of publisher ad servers**;
- the market for the **supply of online ad intermediation services**, including ad exchanges and ad networks;
- the market for the **supply of demand-side platforms (i.e. DSPs)**; and
- the market for the **supply of advertiser ad servers**.

In addition, there are a number of data-related service providers and services, including data management platforms and data analytics services.

We consider each of these segments in further detail below. The following sections include some market share estimates. With the exception of markets for general search engine services and online search advertising, there is limited publicly available information on the revenue generated in each relevant market. It is therefore not possible to calculate the market shares of Google and its rivals in ad tech with accuracy.¹⁶

¹⁶ This submission makes some reference to sources such as Datanyze, which was quoted in the French *Autorité de la concurrence* 2018 Opinion with the disclaimer that the *Autorité* could not vouch for the objectivity of its data. News Corp Australia offers a similar disclaimer, and adds that the metric used by Datanyze is not optimal. Datanyze seems to rely on the number of websites connected to a particular ad server in order to calculate the latter's market share. However, this is at best a proxy for the ad server's reach, rather than its market share. In theory, an ad server could have very wide reach but very low success in winning impressions, and hence a low level of market power. As such, the references to market share determined by Datanyze should be considered as indicative, not determinative. Indeed, in News Corp Australia's experience, Google has an even stronger presence in some markets than the Datanyze data suggests. Should the ACCC wish to calculate market shares as part of its Inquiry, News Corp Australia considers that the best way to do so would be by reference to the revenues flowing from/generated by the ad server, or to the total volume of impressions sold through the ad server. See also *Autorité de la Concurrence*, 6 March 2018, "Sector-

3.1 Market for the supply of publisher ad servers

Publishers use publisher ad servers to organise and manage ad inventory and opportunities on their website.¹⁷ Publisher ad servers are not substitutable for other ad tech services including ad exchanges or advertiser ad servers.

Unlike publisher ad servers, ad exchanges do not manage the serving of the ad on the website or collect information on performance. Publisher ad servers are technology tools solely adopted by publishers to manage and sell ad slot inventory.

Publisher ad servers use information input by the publisher to:

- decide algorithmically how each ad inventory slot on a publisher's site will be sold; and
- determine the sequence in which demand partners (i.e. ad networks or exchanges) are contacted, and their relative priority,

and in doing so, facilitate the publisher's interaction with ad exchanges and networks.

Furthermore, publisher ad servers are not interchangeable with 'buy-side' (i.e. advertiser) ad technologies (including demand-side platforms and advertiser ad servers). This is because publisher ad servers are highly specialised for the sale of ad inventory. For example, publisher ad servers are not designed for bidding on inventory or reporting on purchases, as is required in advertiser ad technologies. In *Google/DoubleClick*, the European Commission held that there is a difference between advertiser ad serving and publisher ad serving due to the differing functions of the systems: publisher ad servers required inventory management and sales reservation functions.¹⁸ This distinction between publisher and advertiser technologies was supported by France's Autorité de la concurrence in its 2018 online advertising decision.¹⁹ In that decision, the Autorité de la concurrence separated ad servers from intermediaries because of their sufficiently separate functionality and the ability for publishers to use them separately.

Despite the fact that Google has combined its publisher ad server, DFP (previously DoubleClick for Publishers) with its ad exchange, AdX, under the umbrella product Google Ad Manager, News Corp Australia considers that publisher ad server technology is a distinct and separate market from ad intermediation services (i.e. ad exchanges and ad networks), as explained further below.

Switching publisher ad servers is expensive and disruptive to publishers' business operations. This is because switching involves costs related to setting up, testing, migration and retraining staff to use the new service provider. Accordingly, there are considerable barriers to switching a publisher ad server, such that the alternative must be demonstrably better for publishers to justify the cost and disruption of switching.

specific investigation into online advertising", available in English at https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf; Opinion no. 18-A-03 of 6 March 2018>

¹⁷ ACCC, Ad Tech Inquiry Issues Paper, Attachment A – Glossary, 10 March 2020, <https://www.accc.gov.au/system/files/Ad%20tech%20inquiry%20-%20issues%20paper.pdf>

¹⁸ Commission of the European Communities, Commission Decision of 11/03/2008 declaring a concentration to be compatible with the common market and the functioning of the EEA Agreement, Case No COMP/M.4731 – Google/ DoubleClick, https://ec.europa.eu/competition/mergers/cases/decisions/m4731_20080311_20682_en.pdf, para 79

¹⁹ Autorité de la Concurrence, Opinion no. 18-A-03 of 6 March 2018: Sector-specific investigation into online advertising, available in English at https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf

[REDACTED] Google's market share of all ad servers was over 70% in France as at February 2017.²¹ Google "is now the largest and/or dominant player" in each ad tech market,²² [REDACTED] News Corp Australia considers that the only other significant publisher ad server in Australia competing with Google is AppNexus, which was rebranded under the Xandr brand following its acquisition by AT&T in June 2018. However, News Corp Australia by no means considers AppNexus/Xandr to pose a competitive constraint on DFP, which we consider to be by far the leading publisher ad server in Australia.

3.2 Market for the supply of online ad intermediation services (i.e. ad exchanges and ad networks)

Ad intermediation services provide products/services which match ad buyers with impressions offered for sale by publishers. Intermediaries include ad exchanges and ad networks. This is without prejudice to the possibility of further segmentation of this market, for example, between ad exchanges and ad networks. However, as explained above, since the rise of exchanges, ad networks have become less relevant for publishers. Many have also expressed concerns with ad networks' lack of transparency. Intermediaries include the Google's ad exchange AdX (now within Google Ad Manager) and AdSense (Google's ad network), as well as third-party services such as Index Exchange and the AppNexus exchange. These are platforms on which supply and demand side sources meet to take part in an auction for ad inventory.

In the FTC's decision in *Google/DoubleClick*, the FTC found that intermediaries included ad networks and ad exchanges:²⁴

"There are two types of ad intermediation products: ad networks and ad exchanges. Ad networks and ad exchanges are alike in that they both aggregate advertising inventory. Ad networks are intermediaries that aggregate or purchase advertising inventory from a group of websites and sell this inventory to advertisers or ad agencies, taking a share of the revenue from each sale. Ad exchanges differ in that they aggregate inventory by providing platforms for advertisers and publishers to list and bid for inventory."

In its *Google/DoubleClick* decision, the European Commission indicated that intermediaries were necessary for connecting smaller publishers with demand and therefore constituted a unique market.²⁵ Similarly, in the decision by France's Autorité de la concurrence in 2018, intermediaries were held to form a separate market from publisher and advertiser ad tools.²⁶

²⁰ [REDACTED] Stephen Adshead, Grant Forsyth, Sam Wood and Laura Wilkinson, Online advertising in the UK, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 60.

²¹ Autorité de la Concurrence, Opinion no. 18-A-03 of 6 March 2018: Sector-specific investigation into online advertising, available in English at <https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf>, para 223.

²² Allen Grunes, Google's Quiet Dominance Over The 'Ad Tech' Industry, Forbes, 26 February 2015, <<https://www.forbes.com/sites/realspin/2015/02/26/googles-quiet-dominance-over-the-ad-tech-industry/#1448aaca5b78>>.

²³ [REDACTED]
²⁴ Federal Trading Commission, Statement of Federal Trade Commission Concerning Google/DoubleClick, FTC File No. 071-0170, <https://www.ftc.gov/system/files/documents/public_statements/418081/071220googleadc-commstmt.pdf>, page 5.

²⁵ Commission of the European Communities, Commission Decision of 11/03/2008 declaring a concentration to be compatible with the common market and the functioning of the EEA Agreement, Case No COMP/M.4731 – Google/ DoubleClick, <https://ec.europa.eu/competition/mergers/cases/decisions/m4731_20080311_20682_en.pdf>, para 68.

²⁶ Autorité de la concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, available in English at <https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf>, page 74.

The ACCC has indicated that it will consider SSPs and ad exchanges together where they are integrated.²⁷ As discussed **above at page 9**, while SSPs once played a distinct role in the ad tech supply chain, this has become less relevant since the rise of real time bidding (**RTB**) open auctions. For this reason, News Corp Australia suggests that the ACCC should consider the terms 'SSP' and 'ad exchange' interchangeably.

[REDACTED]

[REDACTED]²⁸ Other ad exchanges in Australia include AppNexus (acquired by AT&T in June 2018, now under the Xandr brand), Index Exchange, Rubicon Project, Pubmatic, OpenX and Sovrn.

However, as discussed at **section 5(1)(e) below** (see page 26), unless a publisher has enabled Exchange Bidding, Google's AdX will not compete with other exchanges in real time. Accordingly, competing exchanges are correspondingly modest.

In addition to Google's ad networks (Google Ads, AdSense and AdMob), News Corp Australia recognises that Criteo, Playground XYZ and Big Mobile are other ad networks present in Australia.

3.3 Market for the supply of demand-side platforms (i.e. DSPs)

Demand Side Platform (**DSPs**) enable advertisers (or their representatives) to communicate with publisher ad servers. DSPs connect with publisher ad servers through ad exchanges to help target, bid for, and purchase publishers' ad inventory through the RTB auction process. DSPs are not substitutable for ad servers. DSPs, unlike ad servers, can also bid on auctions, rather than just serving ads (hence why DSPs are used more in programmatic buying than ad servers).

Moreover, whilst DSPs are also ad intermediation services, when used by advertisers to buy third-party display inventory (i.e. non-Google display inventory), these platforms are not in the same relevant market as ad exchanges or publisher ad servers because ad exchanges/publisher ad servers do not sell directly to advertisers.

Google's DSP, DV360 [REDACTED].²⁹

Google's dominance in this market is assisted by its exclusion of competing DSPs from accessing YouTube ad inventory and the exclusive access to Google's data 'Superprofiles' on Google advertising facing platforms.

Other DSP providers in Australia include The Trade Desk, Amobee, MediaMath and Amazon.

3.4 Market for the supply of advertiser ad servers

Advertiser ad servers are used by advertisers to manage and track all ad and campaign information in one location.³⁰ Display ads are uploaded to the ad server and then served into multiple traffic sources – using a single ad tag script.³¹ Technologies and services in this market are adopted solely by advertisers

²⁷ ACCC, Ad Tech Inquiry Issues Paper, 10 March 2020, <<https://www.accc.gov.au/system/files/Ad%20tech%20inquiry%20-%20issues%20paper.pdf>>, page 12 footnote 12.

²⁸ [REDACTED]; Datanyze, Market Share: Ad Exchanges, as at 13 May 2020, <<https://www.datanyze.com/market-share/ad-exchanges--399/Datanyze%20Universe>> and Datanyze, Market Share: Ad Exchanges, as at 13 May 2020, <<https://www.datanyze.com/market-share/ad-exchanges--399/Australia>>.

²⁹ [REDACTED]
³⁰ ACCC, Ad Tech Inquiry Issues Paper, Attachment A – Glossary, 10 March 2020, <<https://www.accc.gov.au/system/files/Ad%20tech%20inquiry%20-%20issues%20paper.pdf>>.

³¹ MobileAds, Ad Server For Advertisers – Why You Should Use An Ad Server, 2 April 2018, <<https://www.mobileads.com/blog/ad-server-for-advertisers>>.

or their representatives. Advertisers use advertiser ad servers to manage and track online campaigns across different publishers and to verify first-party publisher reports. Publisher ad servers do not provide this functionality and are therefore not substitutable products.

There is some overlap of features between advertiser ad servers and DSPs, depending on the type of vendor, and often the products are purchased together from the same organisation. However, DSPs are not substitutable for advertiser ad servers: these two services are standalone solutions used for entirely different purposes. See **Figure 2 above** for a diagram showing the position of advertiser ad servers and DSPs in the ad tech supply chain. Advertiser ad servers were typically used in the old waterfall system of buying and selling online advertising and prior to the introduction of real time auctions in advertising buying. DSPs are predominantly used to connect and serve ads in real time auctions. However, that is not to say that ad servers have no ongoing relevance for advertisers in the programmatic supply chain. Advertiser ad servers provide comprehensive tracking, retargeting, optimisation and reporting capabilities and there are certain types of creative functions performed by advertiser ad servers that are not provided by DSPs. Therefore, DSPs do not replace the role of ad servers.

Google provides advertiser ad serving functions through Google Ads and Google Marketing Platform. Other companies that supply advertiser ad servers globally are Sizmek (acquired by Amazon following its bankruptcy in 2019) and AdZerk. Google holds the largest market share through its advertiser ad server, Campaign Manager (now within Google Marketing Platform).³² The 2018 opinion of the French Autorité de la concurrence highlighted Google's 'significant position on these markets', noting estimates of up to 65%.³³

Through these properties, Google has combined products which were traditionally more open to competition. For example, Google has combined – into Google Marketing Platform – Campaign Manager (previously a stand-alone advertiser ad server) with DV360, which is a 'must-have' DSP since it is the only product apart from Google Ads that has access to Google's highly-valued video inventory on YouTube. Despite Google having combined these two services into the one product, News Corp Australia considers that advertiser ad servers and DSPs continue to operate in separate markets.

3.5 Advertising data and data management platforms, tools or services

A separate market or markets also exist for advertising data and data management platforms (**DMP**) tools or services. Advertisers and publishers use data to optimise the effectiveness of advertising spend. In addition, data may assist with targeting,³⁴ deduplication,³⁵ viewability,³⁶ attribution,³⁷ fraud prevention³⁸ and brand safety,³⁹ and supporting display quality. Other DMPs active in Australia include Salesforce, Lotame and Adobe.

³² See e.g. the finding that Google is the "market leader" on the demand side of the programmatic intermediary market (for non-video display advertising), in Stephen Adshhead, Grant Forsyth, Sam Wood and Laura Wilkinson, Online advertising in the UK, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 12.

³³ Autorité de la concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, available in English at <https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf>, page 86.

³⁴ Identifying and reaching the audience for which an ad was designed and/or relevant.

³⁵ Determining how many unique individuals viewed a particular ad or whether or not the potential viewer of the ad has seen the ad. Typically involves tracking an individual across devices.

³⁶ The likelihood an ad will be viewed and then the actual result of whether or not the ad was viewed.

³⁷ The process of matching which advertisements prompted desired actions, such as purchasing a product.

³⁸ Keeps advertisers from paying for advertisement which were viewed or clicked-on by non-real viewers.

³⁹ Ensures advertisements separate from objectionable content.

4 Key players in the ad tech supply chain

4.1 Publishers such as News Corp Australia

News Corp Australia engages in the ad tech supply chain primarily as a publisher of numerous websites and mobile applications. Ad tech services enable News Corp Australia to sell targeted ad inventory and manage the sale of our inventory to different advertisers. As outlined above, an increasing proportion of News Corp Australia's revenue is generated from digital means, and an increasing proportion of revenue from digital channels is from programmatic advertising (i.e. via RTB auctions). Programmatic display advertising sales and ad tech service providers are marketed as enabling publishers like News Corp Australia to offer advertisers a more nuanced and targeted approach to advertising on our websites. In theory, ad tech services should allow News Corp Australia to leverage specific details gathered in real time on a particular display ad inventory, including the data profile of the person viewing the inventory, to gain the highest price for that impression based on advertisers' preferences through an auction process.

How News Corp Australia sells its inventory as a publisher

Specifically, News Corp Australia uses a number of ad tech services to sell its display advertising, as follows.

Direct sales channel

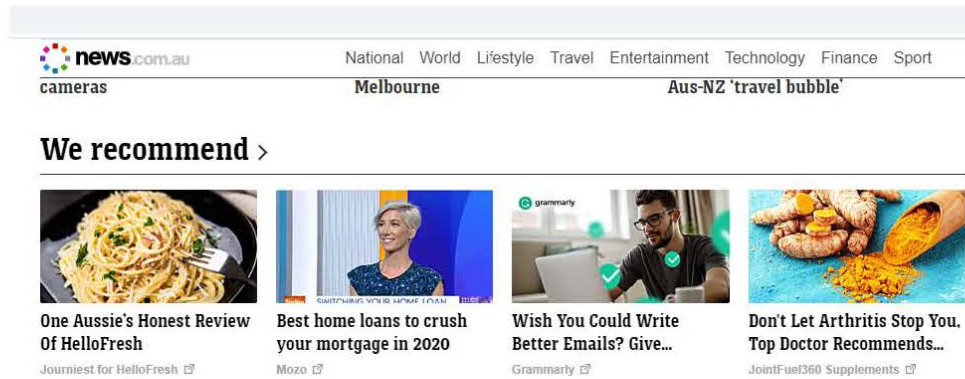
Direct sales account for approximately [REDACTED] of News Corp Australia's advertising revenues. As outlined above, these are direct in that they do not use RTB but are still now largely served using ad tech tools. These include:

- **direct sales** – where News Corp Australia uses Google's publisher ad server, DFP (now rebranded as a module within Google Ad Manager) as its publisher ad server to manage inventory for approximately [REDACTED] of direct sales orders; and
- **performance based advertising** – News Corp Australia uses AppNexus/Xandr and Taboola to manage its performance-based advertising, which accounts for approximately [REDACTED] of direct sales.

News Corp Australia also uses Taboola to sell content recommendation advertising, which is a type of native advertising (i.e. advertising that follows a similar design and feel of a webpage or app). See **Figure 3 below** for an example of content recommendation advertising on the news.com.au webpage.⁴⁰

⁴⁰ While not strictly a form of display advertising (i.e. it does not consist of banners), content recommendation advertising is counted in News Corp Australia's direct sales channel revenues.

Figure 3: example of content recommendation advertising at the bottom of news.com.au homepage



Indirect/RTB sales channel

- **publisher ad server** – News Corp Australia uses only Google's DFP (now within Google Ad Manager) as a publisher ad server for its indirect/programmatic sales channel.
- **ad exchanges** – News Corp Australia first sends inventory to exchanges listed below (in no particular order) in a first auction run using Prebid.js, which is a client-side 'header bidding' solution (see more on header bidding at **section 5(d) on page 27 below**). The winning bid out of the exchanges listed below is then sent to Google's ad exchange, AdX (within Google Ad Manager), which then enters its own bid:



News Corp Australia estimates that AdX (within Google Ad Manager) wins approximately [redacted] of the final auctions in which it participates.

News Corp Australia uses the following ad inventory resellers that re-package inventory for resale to different customers: [redacted]

News Corp Australia also sells some ad inventory through its **News Xtend** business, which is a digital marketing agency offering digital advertising services to small businesses.⁴¹

News Corp Australia also advertises its own publications and is an advertiser for these purposes. To buy ad inventory, News Corp Australia currently uses [redacted] as its demand-side platform (DSP),



⁴¹ NewsXtend Digital Marketing <<https://www.newsxtend.com.au/#>>

4.2 Other suppliers in the ad tech supply chain

In the Final Report of the DPI, the ACCC found that Google has substantial market power in the supply of search advertising services,⁴² and that Facebook has substantial market power in the supply of display advertising services in Australia.⁴³

As we raised in our submissions in response to the Preliminary Report of the DPI,⁴⁴ this conclusion overlooks Google's strong presence in relation to display advertising, which includes selling inventory on its own websites, as well as indirectly using its various intermediary ad tech services (ad servers, DSPs and analytics) on an extensive network of non-Google sites (i.e. through the Google Display Network). While Facebook holds the largest share in the market for online display advertising,⁴⁵ it primarily sells inventory on its own sites. Google is the only firm that supplies services for buying programmatic advertising across the entire supply chain. The revenue and ad inventory flowing through Google's ad tech services are significantly larger than for any other supplier. Some estimates suggest Google's market share of ad exchange services in Australia is 55.15%, with the next largest competitor having a 14.33% share.⁴⁶

Google and Facebook are therefore sometimes referred to as the 'digital duopoly' which collectively dominates the online ad market.⁴⁷ However, while Facebook provides opportunities for advertisers on its own properties (including Instagram and Facebook), its ad tech services for third-party sites are limited and in decline. In late 2018, Facebook shut down its 'Audience Direct' program, which allowed publishers to sell ads on their websites and apps using Facebook targeted data.⁴⁸ Nonetheless, Facebook remains an important 'walled garden' collecting a significant amount of first-party data that is valuable for publishers and advertisers alike.

4.3 Google's role in the ad tech supply chain

Google is present at all levels of the ad tech supply chain and has significant market power in the provision of different types of ad tech services, particularly those that relate to display advertising on third-party sites and mobile applications. The auction process for the sale and purchase of digital advertising is dominated by Google, which operates the ad tech software that both organises (ad servers) and participates in (ad exchange) these auctions.

Google currently supplies the ad tech services listed in **Figure 4 below** and also illustrated in **Figure 5 below**.

⁴² ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 89.

⁴³ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 98.

⁴⁴ News Corp Australia, Submission in response to the ACCC's Digital Platforms Inquiry Preliminary Report, March 2019, <<https://www.accc.gov.au/system/files/News%20Corp%20Australia%20%28March%202019%29.pdf>>, pages 5-6.

⁴⁵ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 98.

⁴⁶ Datanyze, Ad Exchanges, as at 13 May 2020, <<https://www.datanyze.com/market-share/ad-exchanges--399/Australia>>.

⁴⁷ See, e.g. Ian Burrell, Are Google and Facebook killing advertising?, Raconteur, March 13 2019, <<https://www.raconteur.net/business-innovation/google-facebook-duopoly>>.

⁴⁸ See, e.g. AdAge Facebook Shatters Ad Tech Services As It Stumbles In Question To Topple TV, Adage, 25 October 2018, <<https://adage.com/article/digital/facebook-shuts-major-video-ad-technology-services/315628>>.

Figure 4: Googles ad tech products and services

Product in ad tech supply chain		Google's product	Note
Publisher ad server		DFP	Rebranded as a module within Google Ad Manager in 2018. News Corp Australia considers DFP to be the undisputed market leader among publisher ad servers
Ad intermediation	Ad exchange	AdX	Google's ad exchange, AdX , was also rebranded as a module within Google Ad Manager in 2018. AdX dominates the market in Australia, with 55.15% of market share (especially notable compared to its next best competitor, AppNexus, which had 14.33%). ⁴⁹
	Ad networks	Google Ads, AdSense, AdMob	<p>Google Ads (formerly AdWords) is an integrated buy-side platform that enables advertisers to buy search and display ads on the Google Network, including Google Search, YouTube, Gmail etc, and third-party websites and apps that sell inventory through AdSense or AdMob. Commonly used by small-to-medium businesses as a single stop shop for hosting creative, managing campaigns, targeting, bidding, optimisation and billing. 96.6% of websites carry ads using Google Ads.⁵⁰ Google Ads is a 'must have' product for advertisers, because it is the only platform from which YouTube inventory can be bought (besides Google's Display & Video 360 (DV360)).</p> <p>AdSense is an ad network through which publishers supply website ad inventory to advertisers using Google Ads or DV360 (discussed below) to advertise on the Google Network.⁵¹ AdSense is the largest contextual advertising marketplace globally, with more approximately 10.8 million websites using AdSense.⁵²</p> <p>AdMob is an ad network specifically designed to allow mobile app developers monetise their apps by allowing Google to sell ad inventory on apps to advertisers.⁵³</p>
DSP		DV360	Display & Video 360 (DV360) (formerly <i>DoubleClick Bid Manager</i>) is generally used by larger advertisers to purchase ad inventory on YouTube. DV360 is now part of Google Marketing Platform (see Box 2 below). News Corp Australia considers that DV360 has an overwhelmingly large market share relative to its competitors at greater than 50%.
Advertiser ad servers		AdWords (now Google Ads); Campaign Manager (now part of Google Marketing Platform)	<p>Google Ads – in addition to its ad network capabilities, Google Ads also allows advertisers to create ads and manage and track their ad campaigns.</p> <p>Google Marketing Platform – in addition to its DSP capabilities through DV360, Google Marketing Platform also encompasses ad-serving capabilities, particularly through its inclusion of Campaign Manager, Google's former stand-alone ad server. More on Google Marketing Platform is set out below in Box 2.</p>

⁴⁹ Datanyze, Ad Exchanges, as at 13 May 2020, <<https://www.datanyze.com/market-share/ad-exchanges--399/Australia>>.

⁵⁰ W3Techs, Usage statistics and market share of Google Ads for websites <<https://w3techs.com/technologies/details/ad-google>>

⁵¹ DPI Final Report, page 125

⁵² OKO Ad Management '13 Google AdSense Facts and Statistics 2019' 18 October 2019 <<https://oko.uk/blog/adsense-facts>>

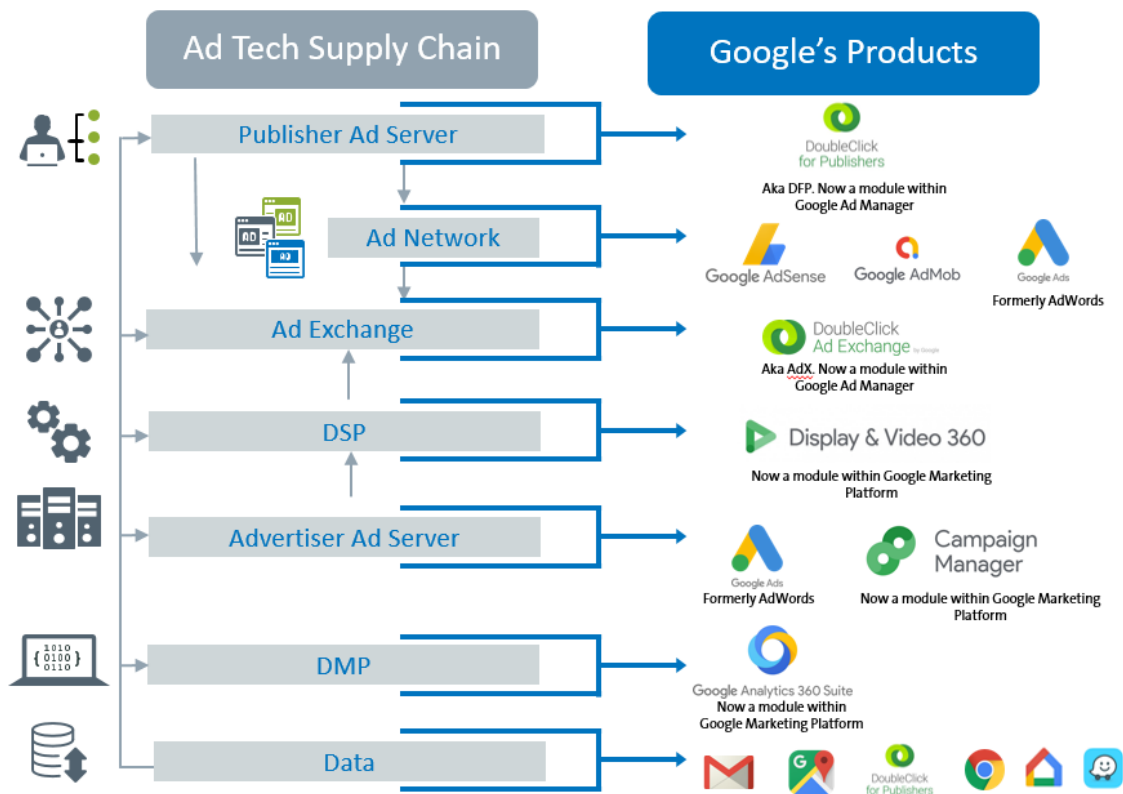
⁵³ DPI Final Report, page 125

Box 2: Google Marketing Platform

Google Marketing Platform is a unified advertising and analytics platform. This platform integrates Google's former DoubleClick advertiser products and the Google Analytics 360 suite under a single platform. Google Analytics is more than ten times more widely used than its closest rival.⁵⁴ Also included in this platform is DV360 which combines the former DoubleClick Bid Manager (Google's former DSP), Campaign Manager (Google's former advertiser ad server), Studio and Audience Center (**DMP**).

This submission will refer to **DFP** (Google's publisher ad server) and **AdX** (Google's ad exchange) (even though they are now both modules within the rebranded 'Google Ad Manager') to highlight the different functions of these services.

Figure 5: Google's ad tech services



Google's market share in relation to ad tech services enabling ads on third-party websites is significant and growing, as illustrated in **Figure 6 below** (sourced from W3Techs).

⁵⁴ According to data available on Datanyze, Google Analytics and other associated Google web analytics software hold approximately 78% market share in Australia, as opposed to the second largest provider, Facebook Analytics, which has approximately 5% market share. The global statistics show a similar disparity. See Datanyze, Market Share Category: Web Analytics, as at 14 May 2020, <<https://www.datanyze.com/market-share/web-analytics-1/Australia>>. See also Matt McGee, As Google Analytics Turns 10, We Ask: How Many Websites Use It?, Marketing Land, 12 November 2015, <<https://marketingland.com/as-google-analytics-turns-10-we-ask-how-many-websites-use-it-151892>>.

Figure 6: Growth in Google's market share (2018-2020)

April 2018	September 2018	May 2020	
85% of all websites carry ads using Google Ads	93% of all websites carry ads using Google Ads	96.6% of all websites carry ads using Google Ads ⁵⁵	2.5% Amazon Associates, next most prevalent source of ads on third-party websites, used by 2.5% of all websites ⁵⁶

5 Key competition issues in the ad tech supply chain

Ad tech services have the potential to offer significant benefits and opportunities to both publishers and advertisers. However, News Corp Australia is concerned that competition in the market for ad tech services is failing. This is primarily because Google is the only firm that provides services at all levels of the supply chain. When buying or selling ad inventory via programmatic means, Google is an 'unavoidable trading partner' for both publishers and advertisers and this has enabled Google to engage in the conduct set out below.

In the following sections we set out the practices we have observed in the ad tech supply chain and explain how we consider that this is undermining the proper, efficient and competitive functioning of the markets for the supply of ad tech services, examining:

- the integration of Google's ad tech services;
- tying and bundling of Googles products;
- lack of transparency about Google's auction mechanisms and pricing algorithms; and
- Google's refusal to share meaningful data with publishers.

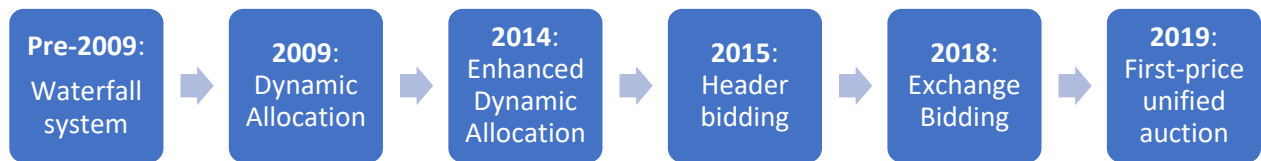
5.1 The evolution of Google's role in programmatic display advertising

In analysing Google's conduct, the evolution and development of the programmatic advertising is relevant contextual information and in News Corp Australia's view illustrates some of the anticompetitive practices Google has engaged in.

In this section we set out the evolution of the RTB auction process over the past decade, which has been characterised by Google extending its market power at different points along the ad tech supply chain (see **Figure 7 below**). In particular, Google has leveraged DFP's position as the leading publisher ad server to give an advantage to AdX, Google's ad exchange, at the expense of competing ad tech intermediaries.

⁵⁵ W3Techs, Usage statistics and market share of Google Ads for websites , <https://w3techs.com/technologies/details/ad-google/>.
⁵⁶ W3Techs, Usage statistic and market share of Amazon Associates for websites <<https://w3techs.com/technologies/details/ad-amazonassociates>>.

Figure 7: Evolution of RTB auction process under Google



(a) The waterfall setup

In the early days of programmatic advertising, publishers would prioritise their demand sources (including direct deals and ad exchanges) within DFP in a waterfall-like sequence. The waterfall order within DFP was determined by the publishers based on how they valued their demand partners. This was generally determined according to the estimated performance of the exchanges/networks, which was based on average historical yield expressed in cost-per-mille/thousand (**CPM**).⁵⁷ Each time an ad space was available, DFP would give first priority to ads sold through direct deals. If a direct deal was no longer eligible, DFP would select the demand source (i.e. exchange or ad network) ranked first in the waterfall and that exchange would be given the opportunity to bid for the ad space above a floor price given by the publisher.

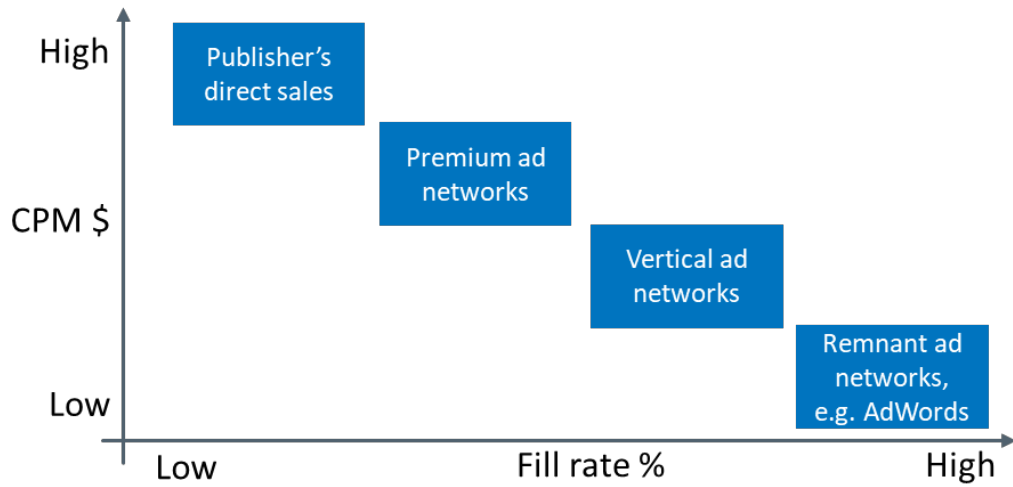
If the first-ranked ad exchange bought the ad space, the selection process was completed and no other exchange was called. For ad networks, if the first-ranked exchange did not buy the ad space, then it would be offered at a lower price to the exchange ranked immediately next in the waterfall. This would continue until the ad space was sold. The deeper the ad space would cascade in the waterfall, the lower the price at which it was offered for sale.

For ad exchanges, the price floor for each exchange would be determined separately by the publisher. DFP would call SSPs (which were then more relevant in the ad tech supply chain) to submit bids for the impression. The SSPs would be called by DFP in a cascading 'waterfall' until the impression was sold.

If no ad exchange expressed interest in buying the ad space then the publisher would fill the space with an ad promoting its own business (i.e. an 'in-house' ad).

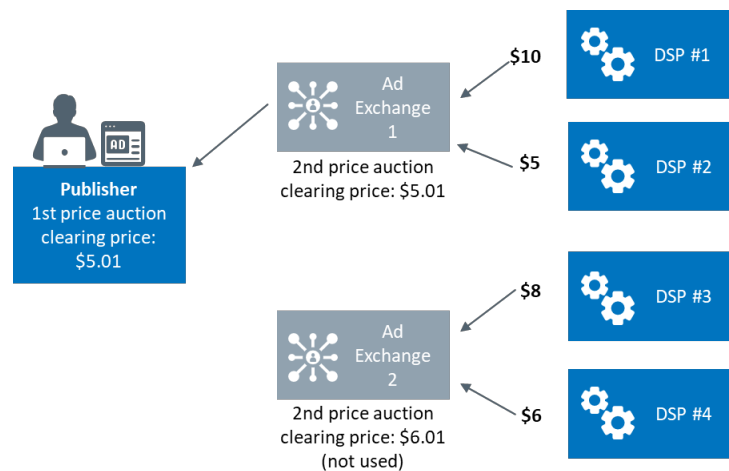
⁵⁷ Cost-per-mille (meaning cost per thousand) refers to the cost an advertiser pays for one thousand views or clicks of an advertisement.

Figure 8: The waterfall setup



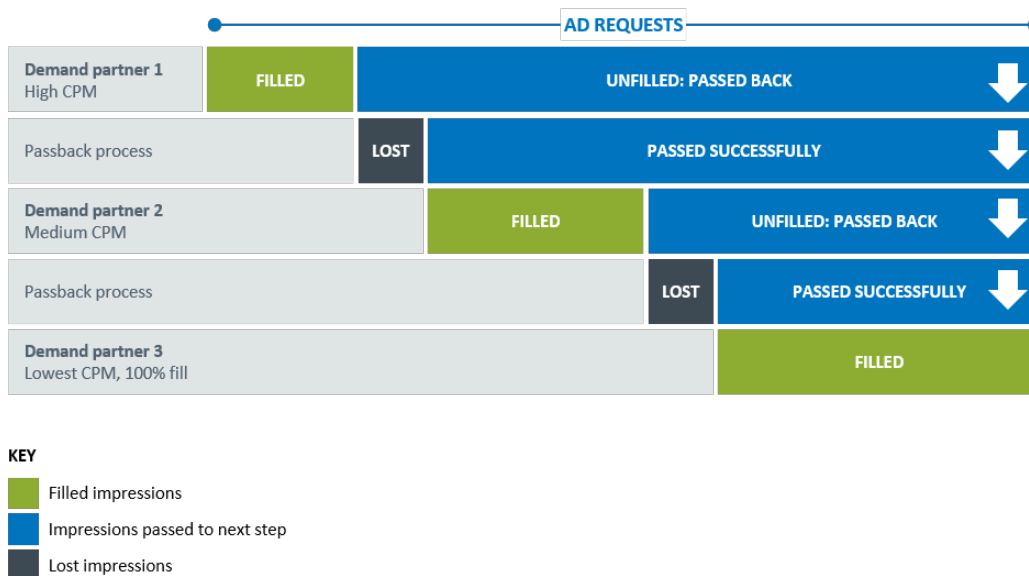
While the waterfall helped publishers reduce the risk that ad inventory would be left unsold, it precluded ad exchanges from competing against each other in real time to maximise publisher yield. For example, if an ad space was offered for sale to the first-ranked exchange (which had an estimated CPM of \$5), the ad exchange might have submitted a bid of \$5.01 and the ad space would be sold at that price. It was possible that an ad exchange ranked lower in the waterfall would have been willing to submit a higher bid (e.g. \$6). However, under the waterfall system that exchange would never have had the opportunity to compete in real time with the first-ranked exchange and the publisher would have been deprived of \$1. This example is illustrated at **Figure 9 below**. In this example, the first auction clears at \$5.01 in the box on the far left, meaning that subsequent and possibly higher bids later in the waterfall chain are excluded from being accepted by the waterfall nature of the action.

Figure 9: Opportunity lost in waterfall



An additional problem with the waterfall set-up was that there would be a loss of ad spaces due to the lag associated with the cascading or passing back of ad spaces from one network/exchange to the next. **Figure 10 below** illustrates the problem of impressions being lost due to the pass back process.

Figure 10: Ad waterfall with 3 demand partners



Source: <https://oko.uk/wp-content/uploads/2018/07/ad-waterfalls.png>

(b) Dynamic Allocation

In 2009, Google introduced the 'Dynamic Allocation' feature to DFP which fundamentally altered the configuration of the waterfall and gave Google's own ad exchange, AdX, a distinct advantage over other ad exchanges. Dynamic Allocation enabled AdX to circumvent the waterfall and compete on the basis of real time demand. No other ad exchange was able to do this.

After the introduction of Dynamic Allocation, when an impression was available and no direct deal was eligible to serve, DFP would select the highest estimated CPM of an ad exchange (as entered manually by the publisher based on historical data in the form of a non-guaranteed line item⁵⁸ within DFP) in the waterfall and use this as a price floor to send to AdX.

After this, AdX would then run a real time auction to see if it could offer a slightly higher price (e.g. 1 cent more). If it could, then AdX would win the auction and serve the ad. The highest ranked exchange would never be called to bid. In essence, Google prevented DFP from allowing third-party exchanges to enter real time bids, while enabling its own exchange, AdX, to do so. By leveraging the substantial market power of its publisher ad server, DFP, Google shielded itself from competition of other exchanges, thereby giving its own ad exchange, AdX, a clear advantage.

(c) Enhanced Dynamic Allocation

In March 2014, Google launched the 'Enhanced Dynamic Allocation' feature within DFP.⁵⁹ This allowed AdX to jump ahead of *direct* deals in the waterfall, even if the publisher had previously sold that ad slot through a direct deal (but only in circumstances where the initial deal is ultimately respected, i.e. agreed number of impressions in a certain time period). No other exchange was able to do this.

⁵⁸ Line items represent an advertiser's commitment to purchase inventory. There are guaranteed line items (those that the publishers contractually require to be served a specific number of impressions, and for which the ad manager would ensure this by reserving ad inventory) and non-guaranteed line items (those that are not reserved nor contractually obligated to deliver ad impressions).

⁵⁹ See Google Support, 2014 releases archive: Q1 2014 March 24 Enhanced dynamic allocation/Targeting presets/Secondary currencies/"Invite contacts" permission/Run default queries (query tool functionality), <<https://support.google.com/admanager/answer/7422466>>.

AdX used an adjusted price from the highest direct deal as the reserve price for its own auction and other ad exchanges could only compete through the waterfall.

Enhanced Dynamic Allocation diminishes publishers' control over their directly sold inventory. While there is the *potential* to increase revenues in the short term, the feature created channel conflict as it allowed advertisers to bypass direct sales and purchase through Google's ad exchange at lower prices. This has the likely effect of weakening the direct sales channel and steering advertisers towards programmatic advertising channels, thereby diminishing publishers' control over their revenue sources. Through its visibility over potentially more lucrative inventory, Google was effectively able to secure the more valuable ad inventory and leave less valuable inventory to other exchanges and advertisers.

In News Corp Australia's experience, it is not possible to disable Enhanced Dynamic Allocation on DFP.

Enhanced Dynamic Allocation remains a feature of Google's current RTB auction offerings.⁶⁰

(d) Publishers' response: header bidding

In response to frustrations about AdX's advantage in the waterfall, in around 2015 publishers responded by creating an innovative solution known as 'header bidding'. Header bidding solutions permit publishers to send their inventory to multiple exchanges synchronously. Header bidding auctions takes place before the user's browser asks DFP to serve the ad. It is also known as the 'pre-auction'.

Header bidding allows all demand partners (e.g. ad exchanges) to submit bids for the ad inventory simultaneously in a unified auction. There is no waterfall or prioritisation of ad exchanges. Once the header bidding auction reveals the winning bid, it is sent to DFP (where it is matched with a non-guaranteed line item, typically price priority line item) and AdX has a 'last look', giving it the opportunity to offer a higher bid and win the impression (as per the Dynamic Allocation feature).

The header bidding auction can be run either through the user's browser using a wrapper on the publisher's website ('client side header bidding')⁶¹ or through a third-party server (e.g. owned by Amazon) which feeds the winning bid back through the browser to the publisher's ad server ('server side header bidding').⁶²

Client-side header bidding involves adding a piece of JavaScript code to a publisher's website in between the 'tags', which then executes each time a page loads, and sends an ad request(s) to a number of demand partners. DSPs then bid via ad exchanges, with the highest bidder winning the auction. It should be noted that Google does not participate in client-side header bidding. Google only participates in server-side header bidding through its own header bidding solution (through Exchange Bidding, discussed below). In contrast, in server-side header bidding, the requests are sent from a central server rather than directly from a user's browser.

One of the drawbacks of client-side header bidding can be latency depending on how publishers set up wrappers on their webpage. However, publishers can control latency by applying strict time-outs and

⁶⁰ Google Ad Manager Help, accessed on 13 May 2020 <https://support.google.com/admanager/answer/3721872?hl=en>.

⁶¹ 'Client-side' is used to describe processes that happen within the user's browser. 'Server-side' is used to describe processes that happen within external servers.

⁶² See, e.g. Sarah Sluis, Header Bidding Goes Server-Side: 6 Things You Should Know, AdExchanger, 11 January 2017, <<https://www.adexchanger.com/ad-exchange-news/header-bidding-goes-server-side-6-things-know/?hootPostID=31ac23a52a81a7fd6aba0d353ac4260f>>.

limiting the number of header bidding demand partners (e.g. to a maximum of 5 to 6). While server-side header bidding addresses some of those latency issues, there is less transparency over the auction which leads to decreased publisher revenues since advertisers are not willing to pay as much for inventory in circumstances where they have less information about the user.⁶³

Header bidding resulted in publishers' revenues increasing significantly, sometimes up to 70%.⁶⁴ Header bidding also gave publishers more accurate insight into the value of their inventory.⁶⁵ Advertisers also benefited since third-party (i.e. non-Google) demand partners were given the opportunity to bid for every ad impression and not only for the impressions that cascaded down the waterfall.⁶⁶ The benefit of having demand sources competing simultaneously compared with the old waterfall is illustrated in **Figure 11 below**. Under the waterfall example in Figure 8, the winning bid was demand source 2 because it was the first exchange called in the waterfall that met the floor price. However, under the header bidding example, the winning bid was demand source 4, because all exchanges were called to bid simultaneously, and it had the highest bid, which was 50c more than demand source 2.

Despite the clear advantages of header bidding, the process was undermined by Google's refusal to participate with its own exchange, AdX, which represents significant amount of advertising demand. This defiance is probably due to the fact that header bidding posed a credible threat to Google's market power across the ad tech supply chain.⁶⁷

As explained above, after the introduction of header bidding by publishers, AdX continued to retain a 'last look' advantage, which enabled it to continue to win impressions over rival demand sources (which may have otherwise bid more or as much as AdX). Consequently, publishers continued to be deprived of potential revenue from advertisers.

⁶³ Maciej Zawadzinski, What's the difference between waterfall auctions & header bidding, The Clearcode Blog, 2 August 2016, <<https://clearcode.cc/blog/difference-waterfall-header-bidding/>>; [REDACTED]

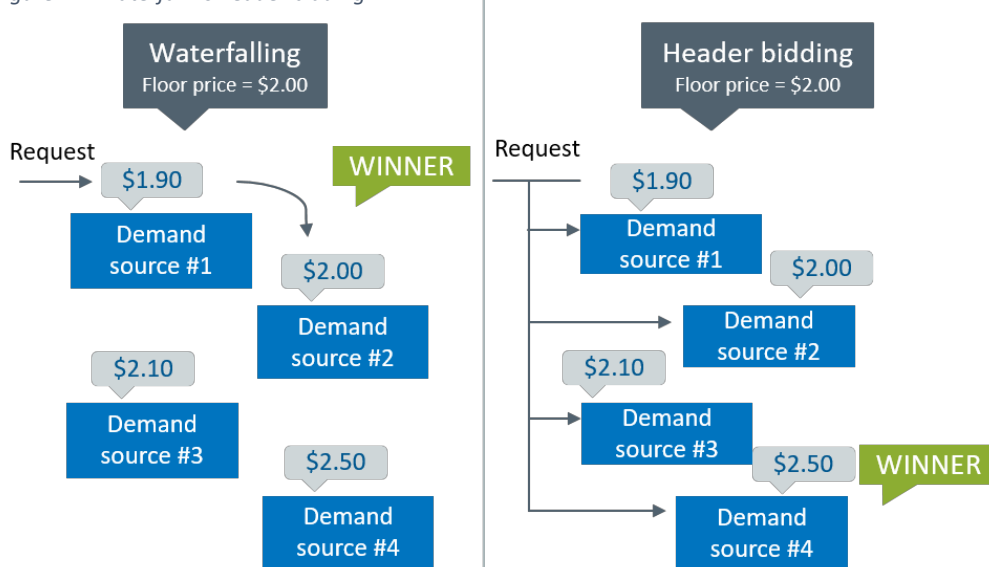
⁶⁴ Natrian Maxwell, Header Bidding: Not Just For Publishers' Benefit, AdExchanger, 29 April 2016, <<http://adexchanger.com/data-driven-thinking/header-bidding-not-just-for-publishers-benefit/>>.

⁶⁵ Maciej Zawadzinski, What is Header Bidding and How does it Work?, ClearCode, <<https://clearcode.cc/blog/what-is-header-bidding/>>

⁶⁶ Natrian Maxwell, Header Bidding: Not Just For Publishers' Benefit, AdExchanger, 29 April 2016, <<http://adexchanger.com/data-driven-thinking/header-bidding-not-just-for-publishers-benefit/>>.

⁶⁷ An AppNexus director once said that "Google sees [header bidding] as a massive threat to their dominance, and has no interest in having this adopted by the IAB [Interactive Advertising Bureau]", see Sarah Sluis, AppNexus Strikes Back Against Google's Attempt To End Header Bidding, AdExchanger, 17 May 2016, <<https://adexchanger.com/ad-exchange-news/appnexus-strikes-back-against-googles-attempt-to-end-header-bidding/>>.

Figure 11: Waterfall vs header bidding



Further, when Google first released its Accelerated Mobile Pages (**AMP**) standard (discussed in further detail below in response to **question 36**), it was incompatible with the client-side header bidding solution that publishers were using. This had a material impact on publishers, since AMP is now considered an essential format to enable publishers to increase their visibility on Google's SERP. Google has since developed a solution that enables publishers to implement client-side header bidding for their AMP pages. However, this solution has significant constraints including a limit on the number of exchanges that publishers can work with and a time constraint on exchange response times, which has the practical impact of shutting out some exchanges. While on their webpages publishers are able to determine whether or not to limit the number of exchange partners for the sake of reducing latency on webpages, with AMP, publishers are all pushed into the same standard.

(e) Exchange Bidding / Open Bidding

In 2018 in response to header bidding, Google introduced 'Exchange Bidding' on DFP. This was renamed 'Open Bidding' in August 2019.⁶⁸ In this paper we will refer to 'Exchange Bidding'. This feature allows rival ad exchanges to compete together in a unified auction.⁶⁹ Publishers which enable Exchange Bidding can use DFP to connect third-party exchanges (known as 'yield partners') to AdX through a server-to-server connection.⁷⁰ Each time inventory is available for sale, all competing exchanges submit their bids simultaneously and a unified auction is hosted by DFP. Essentially, Exchange Bidding is a form of server-side header bidding taking place on Google's servers. The main difference is that Exchange Bidding is easier for publishers to implement because it simply involves enabling the function on DFP. Further, certain reporters found that AdX no longer has a 'last look' advantage and that it faces real time competition from connected third-party exchanges.⁷¹ This article has often been quoted but Google has

⁶⁸ AdExchanger, Google's Exchange Bidding Is Now 'Open Bidding'; Market Researchers Slip, Ad Exchanger, 27 August 2019, <<https://www.adexchanger.com/ad-exchange-news/tuesday-27082019/>>.
⁶⁹ James Hercher, Google's Answer to Header Bidding Is Now Generally Available, AdExchanger, 4 April 2018, <<https://adexchanger.com/ad-exchange-news/google-exchange-bidding-update-elevates-its-header-bidding-solution-solution/>>.
⁷⁰ Google Ad Manager Help, Learn the basics: Introduction to Open Bidding, <https://support.google.com/admanager/answer/7128453?hl=en&ref_topic=7512060>.
⁷¹ Sarah Sluis, Google Removes Its 'Last-Look' Auction Advantage, AdExchanger, 31 March 2017, <<https://adexchanger.com/platforms/google-removes-last-look-auction-advantage/>>.

never confirmed in writing that it no longer has a 'last look'. As described below, publishers have doubts about the veracity of these findings.

Further, Exchange Bidding is not an automatic feature for users of DFP and needs to be activated by the publisher. However, if the publisher does not enable Exchange Bidding, AdX still has a 'last look'. Similarly, if a third-party ad exchange has not integrated with AdX through the server-to-server connection then Google retains its 'last look' advantage over that exchange. News Corp Australia enabled Exchange Bidding capabilities in late 2017.

Although a publisher may 'turn off' some of its yield partners, it does not have the option to disable AdX. This means that AdX retains an advantage since it always competes against yield partners.

While it is possible for a publisher to use a competing ad server (i.e. non-DFP) to connect to AdX, in News Corp Australia's experience it is practically difficult to do so. If a publisher does not use DFP as its ad server then AdX will not compete in real time with other exchanges and will give publishers an estimated bid.

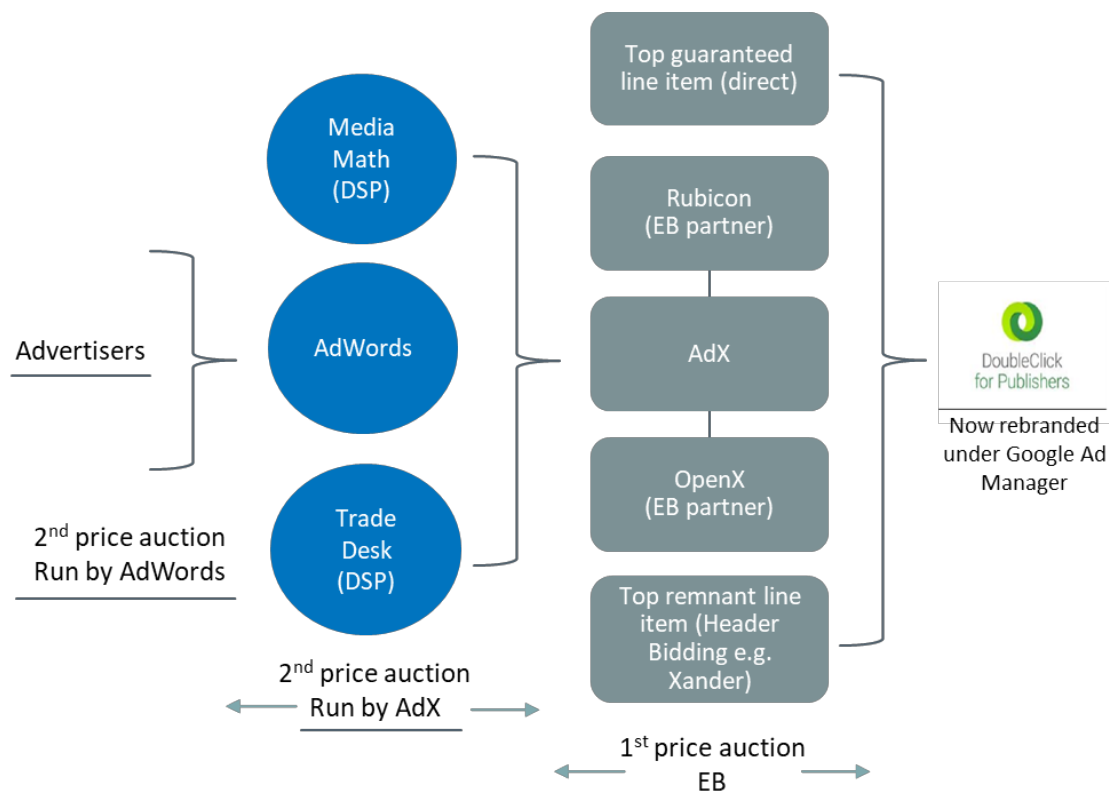
After the introduction of Exchange Bidding, but prior to the introduction of the unified first-price auction (discussed **below at pages 28 and 48**), Google would run the following three (3) types of auctions consecutively for the same impression (but only if the publisher had enabled Exchange Bidding):⁷²

- First, a second-price auction within Google Ads (ex-AdWords) (which is where the winner pays the price bid by the second highest bidder plus one cent) to select the highest bidder among advertisers. Google Ads would then generate a single bid for AdX that was not necessarily equal to the price charged to the advertiser.
- Second, a second-price auction within AdX where Google Ads would compete with other DSPs.
- Third, the Exchange Bidding auction, which was a final first-price auction where AdX would compete against other exchanges.

The auctions described above are illustrated in **Figure 12 below**.

⁷² Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, pages 14-15.

Figure 12: Auction set up with Exchange Bidding enabled (pre-unified auction)



(f) Unified pricing rules and auction

In March 2019, Google announced that it would be switching to a first-price unified auction.⁷³ This transition was completed by the end of September 2019.⁷⁴

While Google suggests the changes "can help reduce complexity and create a fair and transparent market for everyone",⁷⁵ News Corp Australia believes Google's new auction processes recreates the advantage it had over rival exchanges by placing its ad exchange in a privileged position vis-a-vis its rivals.

There are four key aspects of these changes. Our response to **question 25 in Part B** contains a more in-depth examination of each aspect and its impacts.

- The **unification of the auction**. This collapses the second price auction within AdX into Exchange Bidding so that there is only one, first-price auction run by Google Ad Manager.
- The **unified pricing rules**. Google is enforcing a unified pricing floor and restricting the number of rules publishers can use when selling inventory. Unified pricing does not apply to Programmatic Direct. Google has justified these limitations on the basis that price floors are not important in a first-price auction. As **Part B** will show, this is not the case.

⁷³ Sam Cox, Simplifying programmatic: first price auctions for Google Ad Manager, Google, 6 March 2019, <<https://www.blog.google/products/admanager/simplifying-programmatic-first-price-auctions-google-ad-manager/>>
⁷⁴ HeaderBidding, Google Unified Pricing Rules – The Next Steps for Publishers, 18 January 2020, <<https://headerbidding.co/google-unified-pricing-rules-upr/>>.
⁷⁵ Sam Cox, Simplifying programmatic: first price auctions for Google Ad Manager, Google, 6 March 2019, <<https://www.blog.google/products/admanager/simplifying-programmatic-first-price-auctions-google-ad-manager/>>.
 GKSS 509122973v33 120912951 15.5.2020

- The **first-price nature of the auction**. There has been a shift in the industry by most independent ad exchanges from second- to first-price auctions, with Google the last major platform to make the transition. In a first-price auction, the bidder must be willing to pay what they have actually bid. However, the uptake of 'bid shading' by advertisers in response to this change has undermined the benefits of first price auctions for publishers, since bid shading assists advertisers to enter lower bids. Bid shading is discussed further **below at Box 4**.
- The **new bid data transfer file**. While Google had already restricted publishers' access to data about their inventory, it had still been possible for publishers to reconcile separate bid data transfer files to connect bid-side and impression-side information; crucial for yield optimisation. Under the new set-up, Google is making it impossible for publishers to combine the two files. This prevents publishers from understanding demand in the market and customising their ad yield optimisation strategy.

5.2 Key anti-competitive behaviours

The Issues Paper referred to several prominent international studies relating to ad tech services markets.⁷⁶ In News Corp Australia's experience, the ad tech services offered by Google in Australia are very similar to those supplied overseas and hence the competition issues being tackled by the ACCC's global counterparts in relation to Google's conduct are similar to those faced by Australian publishers and advertisers.

Google has implemented many changes over the past decade that, while seemingly positive for publishers in the short term, have in the long term had the cumulative impact of, in News Corp Australia's view, providing Google with clear advantages at the expense of publishers and the competitiveness of the ad supply chain.⁷⁷ Google's practices have had and continue to have the effect of foreclosing competitors, increasing costs and reducing opportunities for advertisers and undermining publishers' ability to monetise their content as effectively as they otherwise could in a competitive market. One significant consequence of Google's conduct has been to prevent the emergence of competitive alternatives to Google in the ad tech supply chain and limit customers' choices.

We set out below the different types of conduct that News Corp Australia considers Google is engaging in which have, or are likely to have, anticompetitive effects. **Figure 13 below** sets out how various elements of Google's ad tech practices fall under these types of anti-competitive conduct.

⁷⁶ Including: Competition Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>; Autorité de la concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, available in English at <https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf>.

⁷⁷ Stephanie Laysner, Are Unified Pricing Changes Good For Publishers or Good For Google, Ad Exchanger, 12 July 2019, <<https://www.adexchanger.com/the-sell-sider/are-unified-pricing-changes-good-for-publishers-or-good-for-google/>>.

Figure 13: Google's anti-competitive behaviours

Google's practices	Types of conduct				
	Tying	Self-preferencing	Restricted data	Opacity	Predatory pricing
Arbitrage			X	X	X
AdX and DFP under Google Ad Manager	X	X	X	X	
Data kept within Google ecosystem	X	X	X	X	
Exclusion of competing DSPs		X	X		
Exclusion of rival exchanges	X	X	X		
Free offering to small publishers	X				X
Inability to opt out	X				
'Last look'		X		X	
Limit on number of pricing rules			X	X	
Minimum bid to win	X	X	X		
No data linking			X	X	
Unified floor price			X	X	

(a) Tying/bundling

Google's combination of its products at different points along the ad tech supply chain is the linchpin to much of its other anticompetitive conduct in the market. We note that some of the behaviour is not direct tying but effectively works in the same way i.e. it constitutes *de facto* tying. While Google justifies much of this conduct under the guise of 'efficiency', over the long term this integration has resulted in increased opacity for publishers and advertisers. Key examples of Google engaging in tying behaviours include:

- **AdWords demand is only accessible via AdX:** AdWords is a platform built for advertisers to help them build their campaigns. However, a key feature of AdWords is that it buys inventory primarily from AdX and not from third-party exchanges. Therefore publishers seeking to access demand from advertisers using AdWords must engage with AdX. Other Google conduct creates strong incentives for advertisers to use AdWords (and therefore for publishers to use AdX). In particular, advertisers wishing to buy inventory on Google's SERP or on Google's Display Network including YouTube must use AdWords or another Google product. As the UK Competition and Markets Authority (**CMA**) noted:⁷⁸

"Advertisers using Google Ads for their search campaigns can easily extend the scope of their campaigns to display advertising. Indeed, Google Ads includes both Search and Display Network by default when an advertiser sets up a campaign on Google Ads."

⁷⁸ Competition Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>, page 207, para 5.211.

Given Google's indisputable market power in search advertising,⁷⁹ advertisers are strongly incentivised to use AdWords for their search advertising campaigns.

AdWords' display advertising capabilities are also tied to Google's unrivalled search advertising capabilities. The tying of AdX to advertisers using AdWords has the effect of increasing Google's market power in the supply of ad exchanges and foreclosing third-party competitors.

In a recent speech, Brian O'Kelley, who is the co-founder of AppNexus and is considered the inventor of real time bidding, lamented the "*devastating move for AppNexus and other independent ad technology companies*" when Google announced that YouTube would no longer allow third-party ad tech. As a result of Google bundling AdWords with AdX, AppNexus' biggest customer, advertising agency WPP, had no choice but to start using Google's technology. As a result, AppNexus' business suffered and it was forced to fire 100 employees in 2016.⁸⁰

- **AdX's functionality is only fully accessible through DFP:** While publishers can technically use a non-Google ad server to access AdX demand,⁸¹ this would have a significant negative impact on revenues. DFP is the only publisher ad server for which AdX competes in real time against other exchanges. While other publisher ad servers can technically connect to AdX, they will not be able to access real time competition from other exchanges. This is because Google refuses to enable AdX to participate in any third-party auctions, including client-side 'header bidding solutions' and will only compete in real time with other exchanges in an auction performed using DFP (i.e. Exchange Bidding, now known as 'Open Bidding'). This de-facto tying conduct is even more pronounced now that AdX and DFP are now under the umbrella service and brand Google Ad Manager.
- **AdX is a necessary yield partner in Exchange Bidding:** DFP favours AdX over rival ad exchanges, through the introduction of Dynamic Allocation and the requirements that publishers using Exchange Bidding include AdX in their yield partners and pay a fee to Google whenever an impression is won by a non-Google Exchange Bidding Partner.

A more detailed explanation is of this conduct provided in **Part B**, in response to **questions 1 and 26**.

(b) Self-preferencing

New Corp Australia also considers that much of Google's behaviour across the ad tech supply chain constitutes anticompetitive self-preferencing conduct.

A clear example of Google engaging in self-preferencing conduct is the conferral of a 'last-look' advantage to AdX, which gave it the ability to outbid other ad exchanges bidding through header bidding. As a result of the Dynamic Allocation feature on DFP, AdX was given the 'last look' over impressions. This enabled AdX to outbid all other exchanges by paying the lowest possible price. Competing exchanges suffered from lower win rates, even if they were willing to bid higher than AdX,

⁷⁹ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 95.

⁸⁰ See Appendix 3, Testimony given by Brian O'Kelley, founder and former CEO of AppNexus (now owned by AT&T) before the United States Senate Judiciary Committee on Tuesday, 21 May 2019, available at: <<https://www.judiciary.senate.gov/imo/media/doc/O'Kelley%20Testimony.pdf>>.

⁸¹ Competition Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>, paras 5.214 to 5.215.

and publishers suffered from lower revenues than they would have achieved if all ad exchanges were able to compete equitably. A more detailed explanation of this conduct is provided in **Part B**, in response to **questions 1 and 25**.

While some suggest Google has removed this advantage under the Unified Pricing Rules, it is virtually impossible to verify. As discussed below, Google's opaque auction mechanisms enable Google to engage in other self-preferencing behaviours that have similar effects to the 'last look' advantage but are difficult to detect. Either way, regardless of whether a 'last look' feature still exists, [REDACTED]

[REDACTED] Google is still able to infer how much it should bid in order to outbid rivals by only a very small margin, likely due to its superior bidding information, both historical and in real time, and better machine learning capabilities.

Google also has the ability to engage in a number of self-preferencing behaviours, although much of this cannot be verified. This is discussed more in **Part B**, in response to **questions 1 and 25 below**.

(c) Opaque auction mechanisms

Publishers and advertisers suffer from a perpetual lack of transparency about Google's RTB auctions. Google's auctions effectively operate in a 'black box' and enable Google to engage in a range of self-preferencing behaviours and arbitrage. While News Corp Australia cannot confirm that Google is currently engaging in such conduct, the opacity of the auctions run by Google's services create the perfect conditions for it to do so.

Ability to favour AdX within Google Ad Manager

Much of the concern about transparency within the RTB auction process stems from the fact that Google is a participant in auctions that it holds on its own servers.

As outlined above, while it has been suggested that Google's new unified pricing auction removes its 'last look' advantage, many publishers, including News Corp Australia, are very sceptical about these claims. There is no way of guaranteeing that Google does not continue to favour AdX over third-party exchanges.⁸² The fact remains that Google has both the ability and incentive to continue to favour AdX over other exchanges. This is because the unified pricing auctions effectively take place in a 'black box' on Google Ad Manager and it is virtually impossible to verify whether or not Google runs a fair auction or gives AdX an advantage over third-party exchanges.⁸³ Indeed, see the analysis on **page 51** as to the likelihood that Google has retained a type of 'last look' advantage.

There are a number of possible opaque self-preferencing behaviours that Google could be engaging in through the unified auction. For example, Google could collect bidding data from competing exchanges. It is also plausible that DFP could pass unique information to AdX regarding the audience that will be exposed to the ad, allowing it to solicit higher bids from advertisers than connected third-party

⁸² [REDACTED]

⁸³ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 10.

exchanges with less insight.⁸⁴ While Google could argue that DFP and AdX are separated by strict information barriers, this would sound unconvincing since it recently decided to rebrand DFP and AdX under the one unified platform, Google Ad Manager.⁸⁵

A more detailed critique of Google's move towards unified pricing and the continuing lack of transparency in Google's auction processes is provided in **Part B**, in response to **question 25**.

Ability to engage in arbitrage

The opacity of Google's auction processes and its access to enormous amounts of data on the buy and sell sides results in Google being able to engage in both 'audience arbitrage' and 'pricing arbitrage'.

Audience arbitrage occurs when an ad tech vendor, armed with data about a publisher's audience, 'usurps' and starts targeting that audience itself.

For example, assume Google knows which internet users are subscribers to *The Australian* through its ability to track those users (e.g. through its web browser, Chrome). This is an audience for which advertisers are likely willing to pay premium prices for ad inventory. Google can now follow this audience across the web, seeing all of the websites they access. Google can use this information to purchase inventory on less reputable or less well-known websites for an inexpensive price, but continue to charge the premium price to advertisers, extracting the margin. Alternatively, and more directly, Google can simply offer advertisers the ability to target this premium audience in a manner disconnected from the actual publisher: through Google's own properties, like YouTube. In that case, Google retains 100% of the ad spend.

This is both, in News Corp Australia's view, exploitative and exclusionary. It undermines the relationship between the publisher and its most valuable asset, its reader audience, and diverts ad revenue away from publishers to the benefit of only Google.

Interestingly, Google's terms and conditions have relaxed over the years, such that the possibility of audience arbitrage occurring is left open. Previous iterations of contracts specified that it could not use data derived from publishers for retargeting for Google's own benefit. More recent contracts have removed that strict wording.

Due to its market power and use of two consecutive second-price auctions, Google is also theoretically able to engage in ***pricing arbitrage*** by extracting a higher margin, even outside the context of premium audiences. Say the winning bidder in AdWords is charged \$3 cost-per-click (***CPC***)⁸⁶ and AdWords converts it to \$6 CPM. AdWords then competes on AdX against DSPs. If the highest other bid is only \$3 CPM, AdWords could pay only \$3.01 CPM, leaving Google able to pocket the \$2.99 CPM difference.

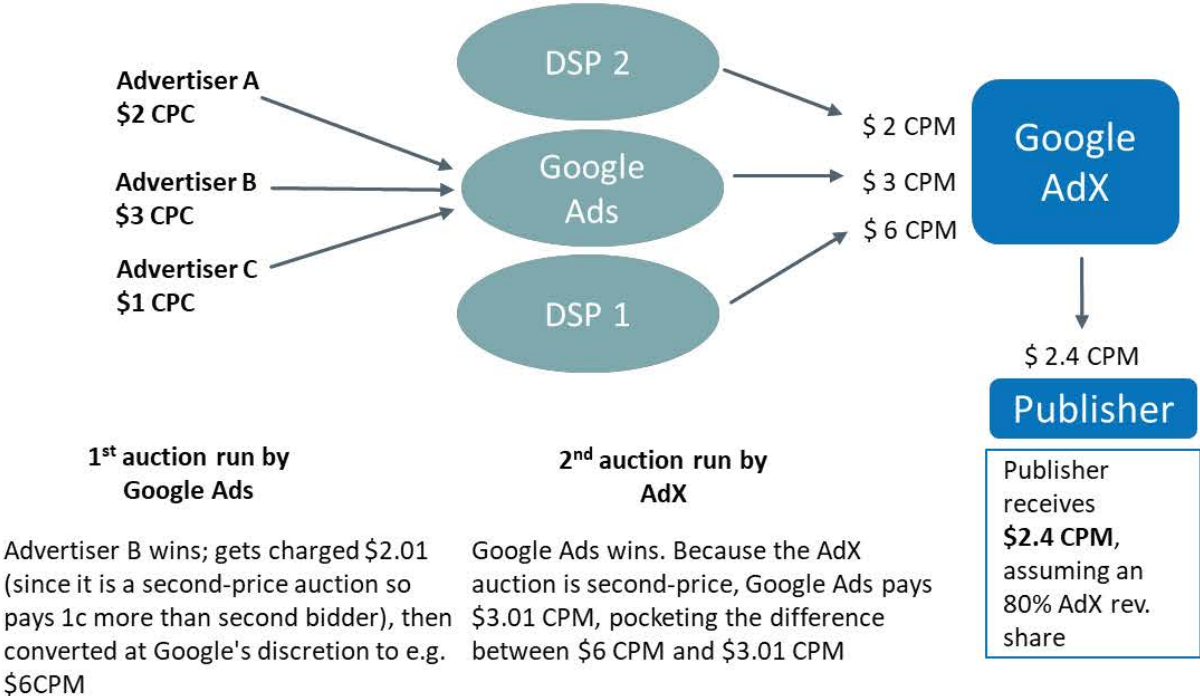
⁸⁴ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 30.

⁸⁵ Jonathan Bellac, Introducing Google Ad Manager, Google, 27 June 2018, <<https://www.blog.google/products/admanager/introducing-google-ad-manager/>>.

⁸⁶ Pay per click, in which an advertiser pays a 'cost per click', is a digital advertising model where an advertiser pays a publisher when the ad is clicked, driving traffic to websites. Under a cost per mille (CPM) model, the advertiser's ad is displayed regardless of whether the consumer clicks on it.

Figure 14 below is a diagram illustrating a method by which Google's pricing arbitrage mechanism could have functioned under the second-price auction set up.⁸⁷

Figure 14: Google second-price auction hypothetical



The risk of such exploitation taking place would decrease if the ad tech market were more competitive, i.e. there were alternatives to Google.

[REDACTED]

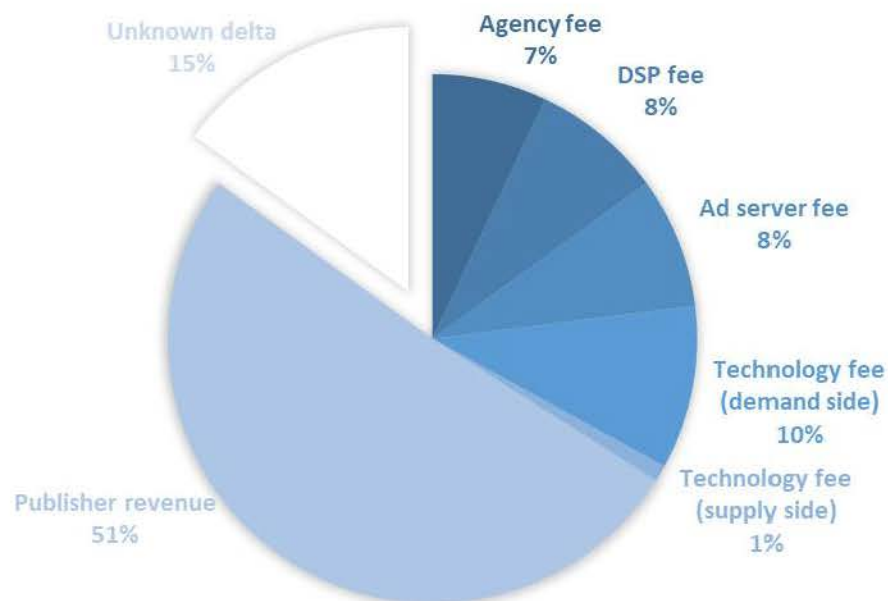
A UK study highlighted an 'unknown delta' of advertiser spend which may reflect the impact of arbitrage. A 2020 study by the Incorporated Society of British Advertisers (*ISBA*), in which Google Ads did not participate, examined the programmatic supply chain, including breaking down the components digital advertisers' expenditure. Using a sample of 31 million matched impressions, the study found that the winning bid in the DSP often did not match the gross revenue records in the supply-side: an average of 15% of advertiser spend could not be attributed to any specific cost source.⁸⁹ The breakdown of advertiser spend is illustrated in Figure 15 below.

⁸⁷ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 11. This simplified example assumes that AdX charges a 20% commission on the closing price of its auction. Google Ads auction bids are expressed on a Cost-Per-Click (**CPC**) basis, while the AdX auctions run on Cost-Per-Mille (**CPM**). As a result, Google Ads has to convert the winning CPC bid to a CPM basis. This requires calculating the Click-Through-Rate (**CTR**) of the ad. Google has considerable discretion in making this conversion.

⁸⁸ [REDACTED]

⁸⁹ Appendix 4, ISBA (UK), *Programmatic Supply Chain Transparency Study, Executive Summary*, May 2020, pages 8-10. GKSS 509122973v33 120912951 15.5.2020

Figure 15: Components of advertiser spend based on the ISBA Programmatic Supply Chain Transparency Study – Executive Summary



According to the study, this 'unknown delta' represents one third of total supply chain costs in the UK. The exact cause is unclear, and study suggests that this requires further investigation. The study says that the 'unknown delta' may reflect a combination of factors including, for example:

- limitations in data sets, necessitating occasional estimations;
- DSP or SSP fees that aren't visible in the study data;
- post-auction bid shading;
- postauction financing arrangements or other trading deals;
- foreign exchange translations;
- inventory reselling between tech vendors;
- or other unknown factors.

In News Corp Australia's view, considering the findings of the study coupled with Google's ability (and incentives) to engage in pricing arbitrage, it is neither inconceivable nor improbable that at least a substantial component of the 'unknown delta' reflects exploitative pricing by Google. [REDACTED]

The opacity of these auctions leaves scope for Google to continue its arbitrage mechanisms going forward, especially in respect of rent extraction, as discussed further in **Part B** in response to **question 26**.

(d) Limiting access to data

Google's ad tech services have privileged access to data amassed from Google's logged-in ecosystem and exclusive access to user IDs for targeting and measurement/attribution purposes. This deepens publishers' and advertisers' dependence on Google's products.

Publishers have limited access to data about auction bids for advertising inventory on their websites. Compounding this, Google has recently removed the ability for publishers to link the two data sets available to it capturing bidding data and impression level data, meaning publishers will no longer be able to holistically audit their auctions. Further, Google has announced it is removing third-party cookies from Chrome – which play a vital role in the ad tech supply chain (see **Box 6 on page 76**) – and has provided minimal detail of what they will be replaced with.

A more detailed explanation of this conduct is provided in **Part B**, in response to **questions 13-16**.

(e) Predatory pricing

Google has a strategy of aggressive pricing for its publisher ad server, DFP. A recent example of this is Google's announcement in April 2020 that it will waive all publisher ad serving fees for publishers globally for five months in the wake of COVID-19.⁹¹ Because of its leveraging of the supply chain, Google can afford to cross-subsidise DFP below cost, and recoup its lost profits with its upstream revenue. The rationale behind this is linked to the de-facto tying of AdWords and Google Ad Manager. The tied nature of these services increases the incremental value to Google of each additional publisher. Unless a competitor ad server is able to replicate the entirety of Google's ad tech stack, which it will not be able to do, publishers new to Google's ad server will be likely to remain immersed in Google's offering throughout the supply chain. Some more detail on Google's potential use of predatory pricing is provided in response to **question 25 in Part B**, while **Figure 16 below** provides a useful visual representation of all of the above forms of conduct.

⁹¹ Google, Fee relief to support our news partners during COVID-19, 17 April 2020, <<https://www.blog.google/outreach-initiatives/google-news-initiative/supporting-business-our-news-partners-during-covid-19/>>.

[Redacted]

[Redacted]

(f) Foreclosure

The cumulative effects of Google's practices are twofold: first, there are foreclosing effects, which raise barriers to entry and prevent competitive alternatives from offering equivalent services and, as a result, reduce customer choice; and second, Google can extract the majority of the 'surplus' generated by ad intermediation technology, instead of ensuring these are allocated efficiently between players in the market. The ultimate outcome is significant societal and consumer harm.

[Redacted]

6 Conclusion

Ad tech is a rapidly growing space, reflecting a major shift away from traditional media platforms and on to online platforms. Yet it is not characterised by the dynamic competition often associated with a growing and changing market. News Corp Australia considers that competition is failing across the ad tech supply chain. Google, the only entity present at each level of the ad tech stack, continues to find ways to maintain and strengthen its market power at every level of the ad tech stack. News Corp Australia believes that Google is engaged in different types of conduct that has and/or is likely to have anticompetitive effects. This has caused – and will continue to cause – harm to advertisers, publishers, ad tech suppliers and consumers.

Part B: Responses to Questions in the ACCC's Issues Paper

Efficiency and competitiveness of the relevant markets

2. How competitive do you consider each market in the ad tech supply chain to be and why?

As discussed above in Part A, while it is complex and not necessary to be precise about market definition, News Corp Australia considers the relevant market to be the market for the **supply of ad tech services** in Australia, which can be further segmented into the following markets:

- the market for the **supply of publisher ad servers**;
- the market for the **supply of online ad intermediation services**, including ad exchanges and ad networks;
- the market for the **supply of demand-side platforms (i.e. DSPs)**; and
- the market for the **supply of advertiser ad servers**.

In addition, there are a number of data-related service providers and services, including data management platforms and data analytics services.

Competition Analysis

Irrespective of the manner in which the relevant markets are defined, Google possesses substantial market power and News Corp Australia submits it exercises it with the purpose or the effect of substantially lessening competition.

In **Part A**, we described the conduct of Google in terms of antitrust theories of harm. In **Part B**, we explain by reference to Google's activities at each point along the ad tech supply chain, and by reference to the markets above, how Google excludes third parties from competing effectively, limits interoperability and denies access to essential data and information which has the effect of reducing the competitiveness of the market for the supply of ad tech services. Moreover, the opaqueness of Google's conduct makes it difficult for users of services along the supply chain to evaluate its conduct and compare with alternative suppliers.

A competitive programmatic advertising market

First, it is useful to understand what a 'competitive' programmatic advertising market might look like. A competitive ad tech market should operate like the diagram in **Figure 17 below**.

Figure 17: Diagram of a competitive, well-functioning programmatic advertising technology market

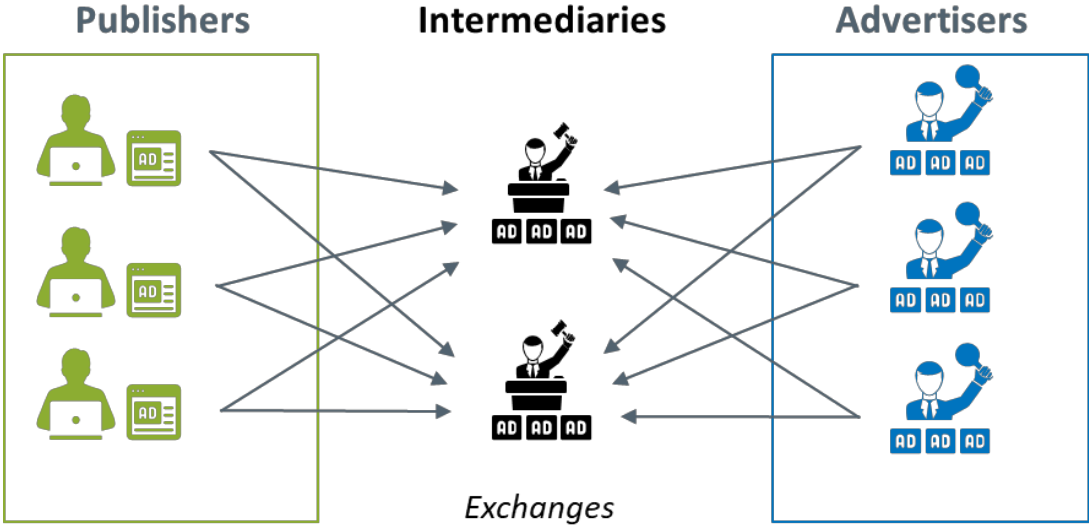
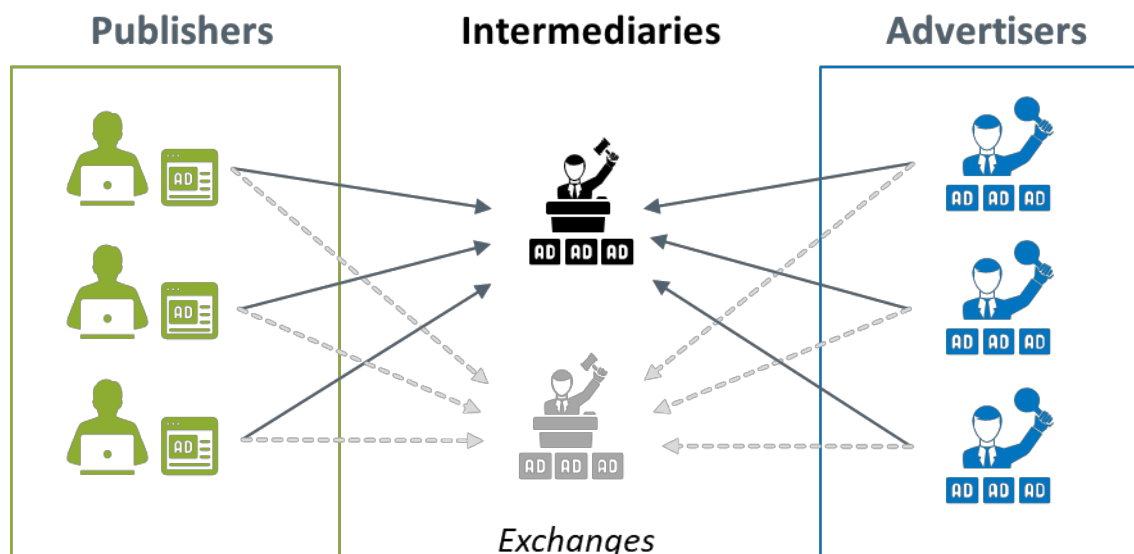


Figure 17 above shows a well-functioning programmatic ad tech market which is characterised by multi-homing (see **Box 3 below**), interoperability and transparency for publishers, advertisers and ad exchanges. Ad exchanges compete with lower take rates and improved matches. Healthy competition maximises output and surplus for publishers and advertisers and markets do not 'tip' despite network effects because advertisers, publishers and intermediaries have proper incentives. This is not the current state of ad tech markets. However, it is entirely possible that publishers and advertisers could use different exchanges if it were possible to do so.

On the contrary, in ad tech markets today, Google has the ability and incentives to restrict multi-homing and raise barriers to entry. This is not simply due to 'network effects' where increased numbers of people or participants improve the value of a good or service, thereby attracting additional users to the service. A useful comparison is ride-sharing markets where, despite the presence of network effects, riders and drivers are able to multi-home and the market is characterised by intense platform competition, lowering the take rates by the platforms themselves and reducing intermediary profits.

In contrast, the ad tech supply chain as it currently operates is depicted in **Figure 18 below** which illustrates that multi-homing (see **Box 3 below** for an explanation of 'multi-homing') is restricted such that a single ad exchange dominates the industry.

Figure 18: Indirect network effects in programmatic advertising



Box 3: Multi-Homing and Single-homing

Multi-homing is the practice of using multiple services at the same time. Single-homing is the opposite of multi-homing and describes the process whereby the user forms ties with a single service provider or system.

Multi-homing generally occurs when the cost of adopting an additional system or service provider is low. When multi-homing is prevalent on each side of a system or platform it becomes very difficult for a platform to generate super profits from its core business due to being continually at risk of being undercut by other platforms.⁹² Platform or system operators can reduce multi-homing by locking in one side of the market (or even both sides).⁹³

In theory, publishers should be able to multi-home on all aspects of their ad tech including their use of publisher ad server and ad exchanges. While News Corp Australia currently used various ad exchanges, none of these are given the opportunity to compete in real time with AdX (now within Google Ad Manager), and therefore the ability to multi-home ad exchanges is precluded by Google.

Google's conduct in relation to the publisher ad server market

The first stage of the ad tech supply chain is the publisher ad server. Google provides its publisher ad server, DFP, for free to publishers with fewer than 90 million monthly impressions, thereby sacrificing profits in ad servers to discourage competition and favour other parties within Google's ecosystem. As outlined above, given the difficulty, time and cost of implementing and switching publisher ad servers, Google's behaviour raises barriers to entry and actively discourages entry of competing publisher ad servers. This conduct is reinforced at the next level of the supply chain, the exchange, as explained further below.

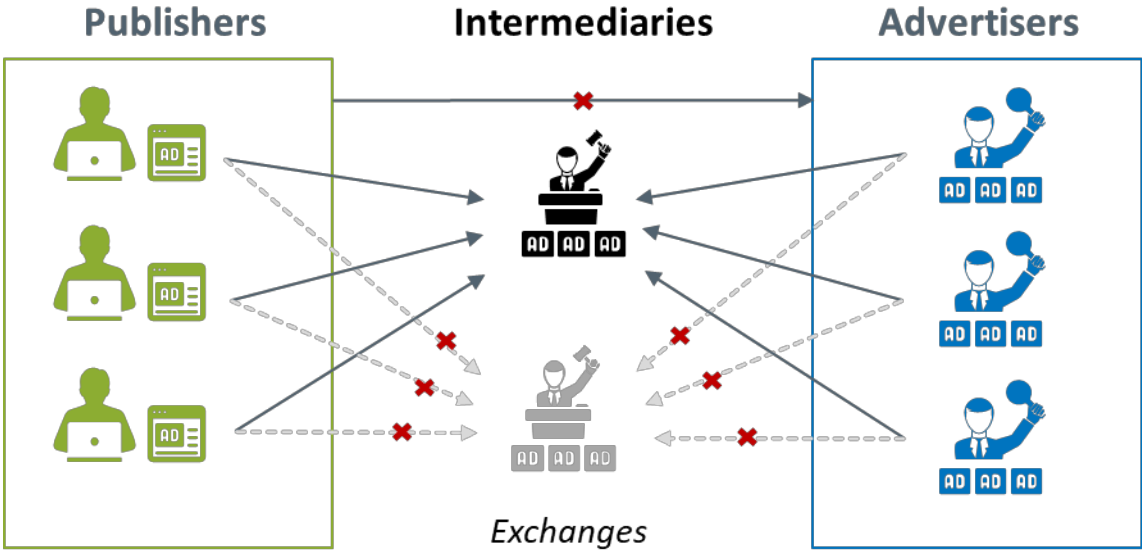
Figure 19 below illustrates how (as indicated with the red crosses) frictions to multi-homing create network effects for the benefit of the dominant platform, Google, thereby excluding and creating

⁹² Feng Zhu and Marco Iansiti, Why Some Platforms Thrive and Others Don't, Harvard Business Review, January-February 2019, <<https://hbr.org/2019/01/why-some-platforms-thrive-and-others-dont>>.

⁹³ Feng Zhu and Marco Iansiti, Why Some Platforms Thrive and Others Don't, Harvard Business Review, January-February 2019, <<https://hbr.org/2019/01/why-some-platforms-thrive-and-others-dont>>.

barriers to entry for competing platforms. As will be explained in detail in this section, the red crosses indicate impediments to direct deals, and to publishers and advertisers using alternative exchanges, which operate to reinforce Google's dominance of AdX in the supply of ad intermediation services. As the dominant exchange, AdX can extract excessive take rates. It can also impede competition, leading intermediaries (i.e. ad exchanges) to exit. Consequently, publishers, intermediaries and advertisers are worse off.

Figure 19: Google has abused network effects by restricting multi-homing and raising barriers to entry



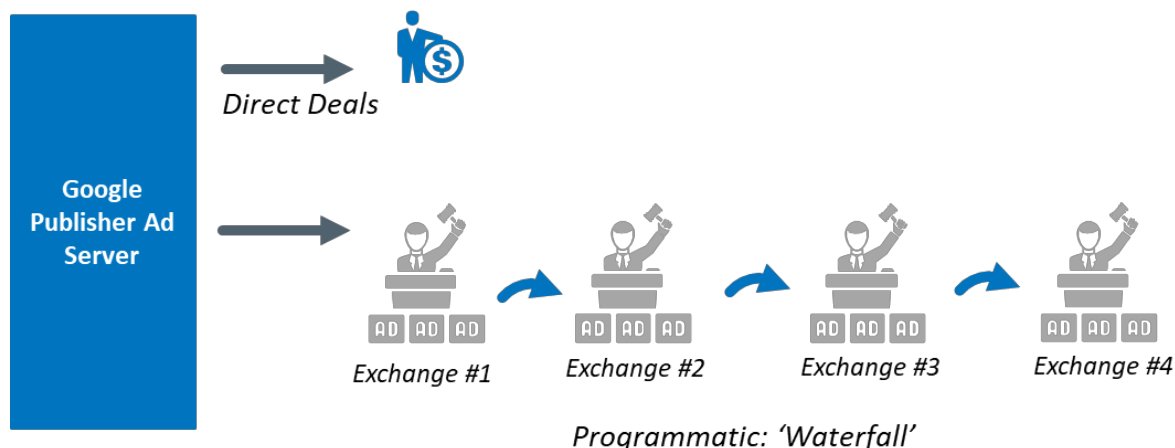
In the following paragraphs, we outline how Google's conduct has prevented healthy, competitive, frictionless multi-homing in the digital advertising market by raising barriers to entry and preventing interoperability.

Google's conduct in relation to the digital ad auction process

In **Part A**, we described the 'waterfall' model of sequencing ad exchanges and ad networks. This is illustrated again in

Figure 20 below. Historically, ad exchanges and ad networks acted sequentially in an order set by the publisher within the publisher ad server, alongside direct deals which were agreed outside of the programmatic 'waterfall' auction. The waterfall order was determined by the publishers based on how publishers valued demand partners, generally based on historical average value that each exchanges/networks could deliver for the publisher. However, as explained above, having exchanges / networks compete in a pre-determined order based on historical averages (versus real time bids) was not optimal.

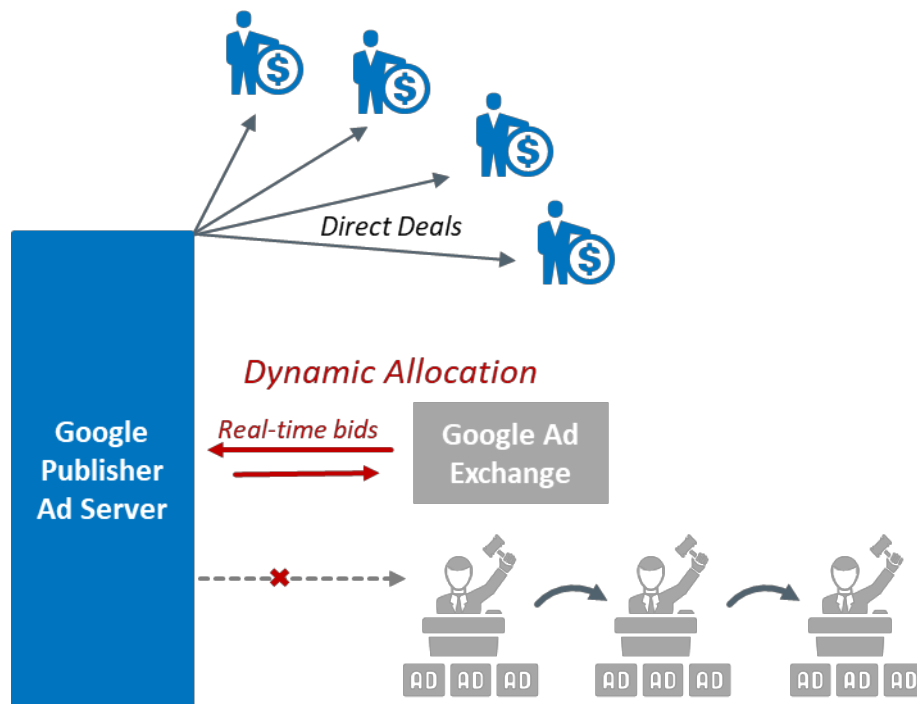
Figure 20: Waterfall model of sequencing ad exchanges and ad networks



In 2010, Google introduced 'Dynamic Allocation', which is illustrated in **Figure 21**: Dynamic allocation introduced by Google in 2010 **below**. Dynamic Allocation allowed only Google's ad exchange to submit real time bids to Google's publisher ad server (DFP) rather than having to participate in the waterfall; rival ad exchanges were relegated to the waterfall sales process and therefore could only bid on ad inventory that was remaining after the real time bid took place in Google's ad exchange. This gave Google's ad exchange a significant advantage over rival exchanges. In effect, Google was foreclosing or denying access to Google's publisher ad server to independent exchanges which competed with Google by disallowing competition from third-party exchanges in the RTB auction. Other exchanges could still only use estimated bids entered into the waterfall. As a consequence of this, Google had a significant advantage to secure more valuable inventory (i.e. pages on publishers' websites), leaving less valuable inventory to other exchanges. Because of this, an equally efficient exchange could not compete with Google, which damaged competition and reduced publisher revenue by excluding other possible bids for that same inventory. The dotted line with the cross through it in **Figure 21 below** signifies that the demand relegated to the waterfall was effectively excluded from competing for available ad inventory in Google's publisher ad server. The Google **publisher ad server** operated to simultaneously preference its own ad exchange by increasing barriers to third-party exchanges participating in ad serving.

This conduct arises due to the vertical integration of Google's publisher ad server and its ad exchange (which creates conflicts of interest and preferencing / foreclosure incentives) and its dominance in publisher ad server services (since it is the main gateway ad exchanges must pass to access publisher inventory).

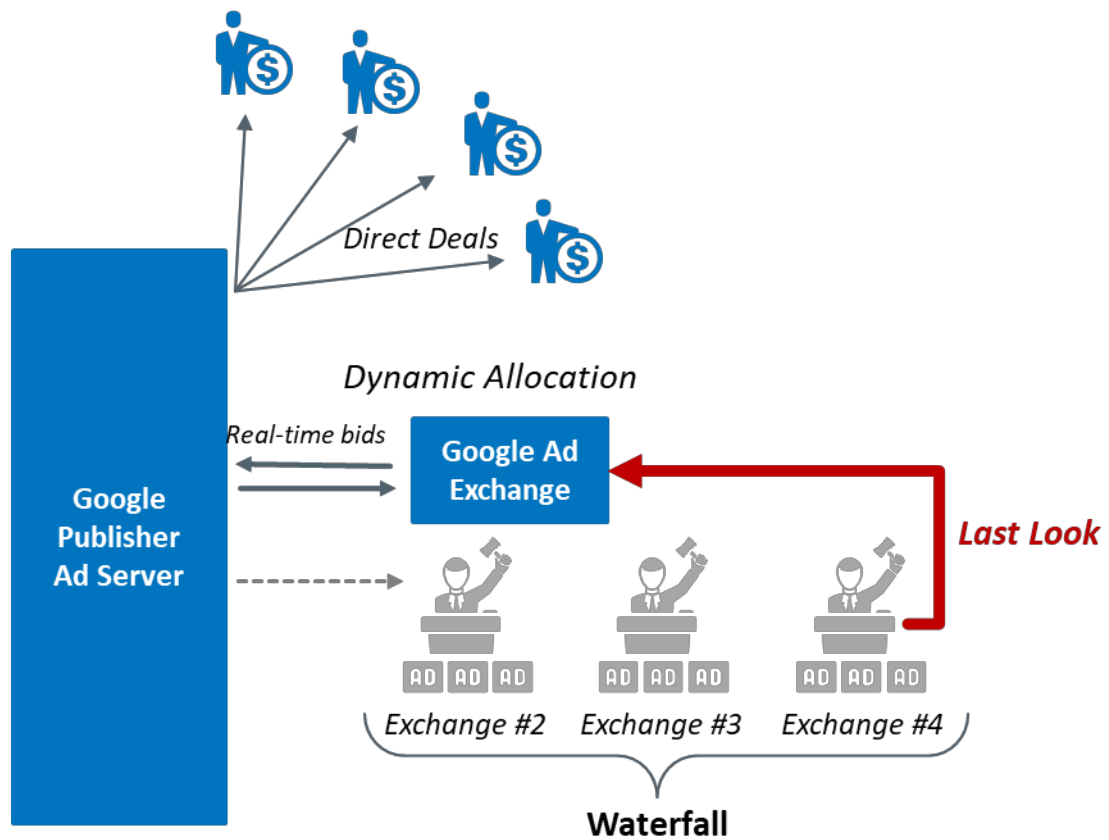
Figure 21: Dynamic allocation introduced by Google in 2010



Google's conduct in relation to the ad exchange market

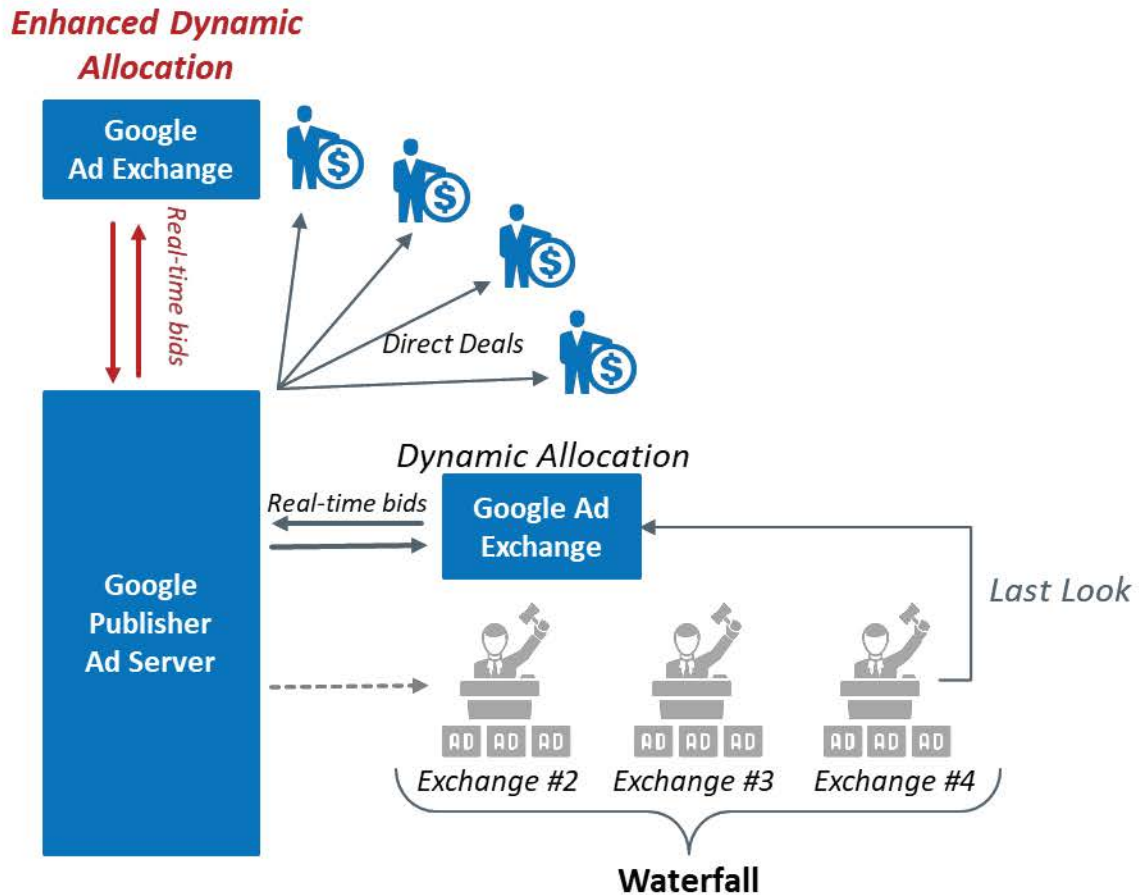
Google's conduct has also undermined the competitiveness of the ad exchange market by introducing 'last look'. The impact of 'last look' is illustrated in **Figure 22 below**. 'Last look' allowed Google to observe all other exchanges' bids before submitting its own bid, allowing Google to pay the lowest possible bid that allows Google to still win the auction. Other exchanges must bid aggressively to reduce the risk of losing the impression to a higher bidder. As a consequence, competing exchanges suffered from lower win rates (versus Google's ad exchange), even if competing exchanges had the same set of bids as Google's exchange. Publisher revenues also reduced as a result. It also deprived rival exchanges of sufficient scale or critical mass to function properly.

Figure 22: The impact of 'last look' - providing Google with access and informational advantages



In 2015, Google introduced 'Enhanced Dynamic Allocation', which also gave Google's ad exchange an advantage over *direct* deals. This is illustrated in **Figure 23 below**. Google's ad exchange was granted access to the publisher ad server to win against direct sold premium (i.e. high value) impressions (i.e. ad inventory). Enhanced Dynamic Allocation enabled publishers to programmatically sell ad slots (often high value, premium space) to Google advertisers, even if the publisher had previously sold that ad slot through a direct deal (as long as the initial deal was respected, i.e. number of impressions in a certain time period). Google's ad exchange used an **adjusted price** from the highest direct deal as the reserve price for its own auction. Other ad exchanges could only compete through the 'waterfall'. Although this may increase revenue in the short-run, it creates channel conflict and allows advertisers to bypass direct sales and purchases through the ad exchange at lower prices. This has the likely effect of steering advertisers towards programmatic advertising channels and away from direct deals. The practice gave Google's ad exchange *exclusive access* to jump ahead of lucrative direct deals.

Figure 23: Enhanced dynamic allocation is introduced by Google in 2015



In response to Enhanced Dynamic Allocation, publishers attempted to combat Google's practices by introducing 'header bidding' in 2016. This is illustrated in **Figure 24 below**. Header bidding was an attempt to provide access to RTB for third-party ad exchanges for publishers' ad inventory. As outlined above, header bidding is when bids are collected from various ad exchanges (either through a client-side or server-side header bidding solution) and then transmitted into the publisher's ad server. Header bidding allows other exchanges to submit real time bids for impressions in an attempt to enhance competition by putting those exchanges on the same footing as Google's ad exchange. Header bidding also allows publishers to avoid sharing the bids made by rival exchanges with Google. However, it is News Corp Australia's understanding that within Google's publisher ad server, bids from header bidding are not able to compete at the same level of priority as bids from Google's ad exchange because Google's 'last look' (as explained above) remains. However, despite Google retaining the 'last look', header bidding did improve publisher revenues.

[REDACTED]

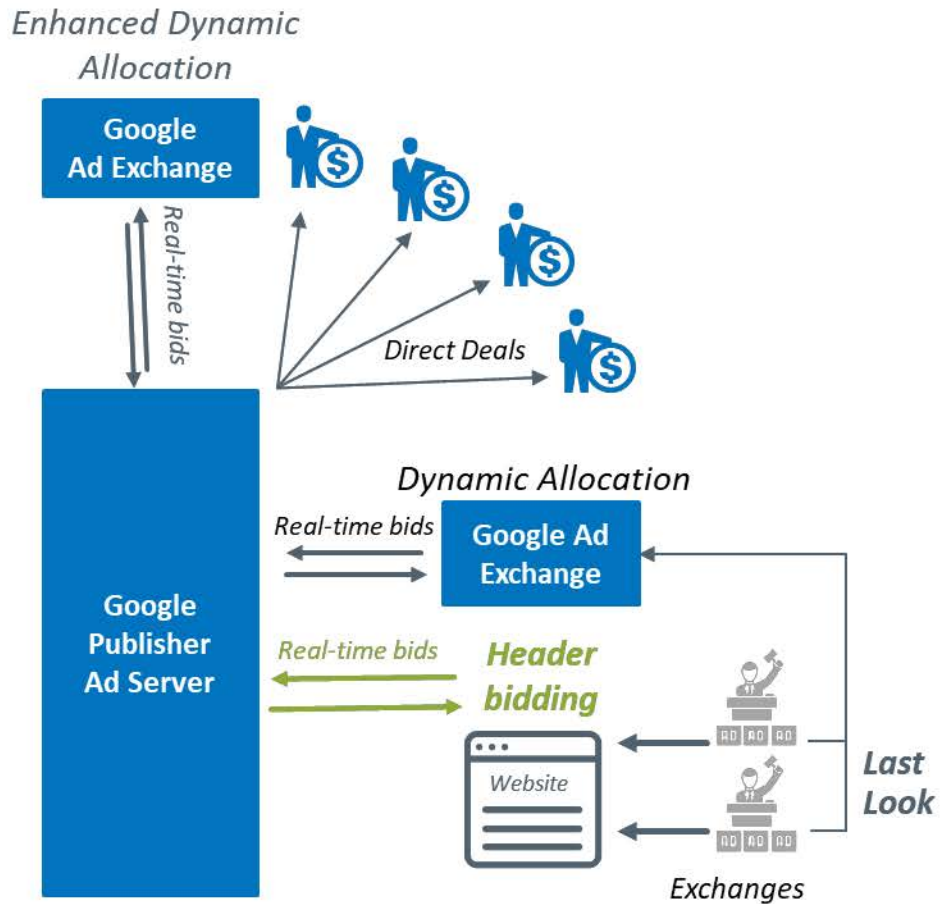
[REDACTED]

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³⁴ [REDACTED]

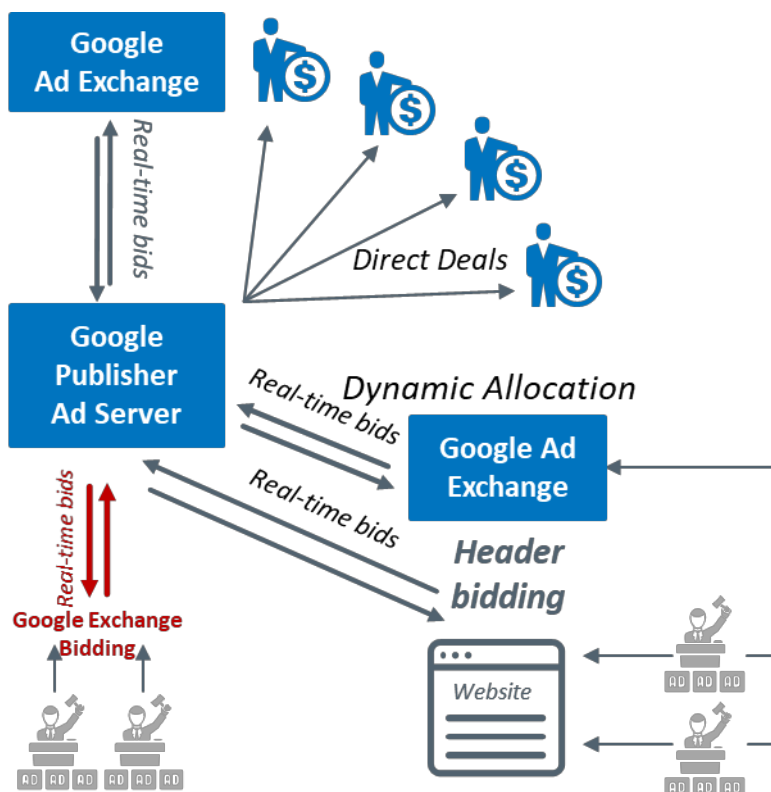
Figure 24: Header bidding is introduced in 26 to give other exchanges access to real time bidding



In response to header bidding, Google introduced 'frictions' making it harder for other exchanges to compete in real time bidding. This is illustrated in **Figure 25 below**. Google's Exchange Bidding, now called 'Open Bidding' (renamed in August 2019, but as stated previously we use the term Exchange Bidding in this submission), is a feature within Google Ad Manager (which has to be activated rather than being available by default in the product) which allows Google Ad Manager publishers to access real time demand from a variety of competing ad exchanges. However, Exchange Bidding still disadvantages other exchanges. This is because Google takes an additional 5% cut (10% for video) of bids from rival exchanges through Exchange Bidding. This means rival exchanges need to bid 5% more to win against bids by Google's ad exchange. In contrast, inventory sold in Google's ad exchange does **not** need to pay this fee.⁹⁵

⁹⁵ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 39. See also [REDACTED]

Figure 25: Google introduces Exchange Bidding in 2017 which introduce frictions to disadvantage rival exchanges participating in real time bidding



Interaction between the publisher ad server and ad exchange

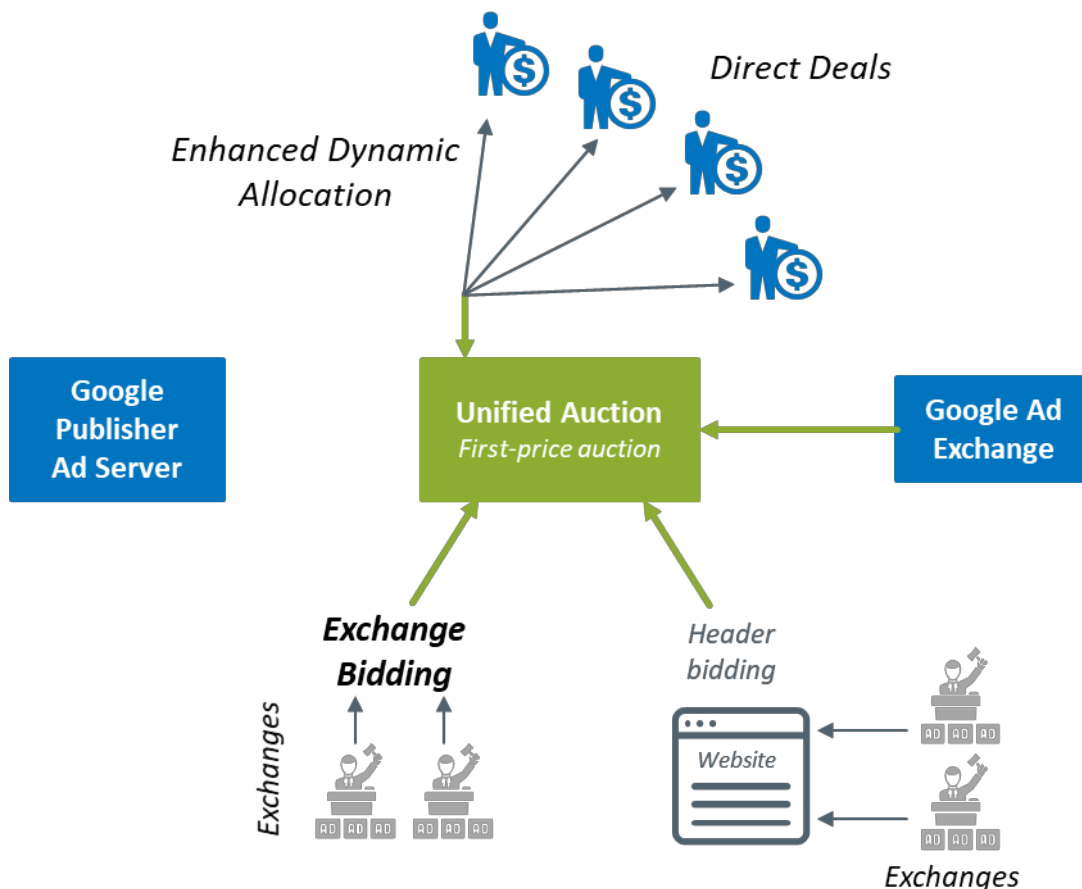
Publishers must use Google's ad server to access real time bids on Google's ad exchange. Google's ad exchange has significant volumes of demand, and publishers want access to this demand since it is more likely to generate higher revenues / yields for publishers. However, Google's ad exchange has introduced frictions which prevent seamless connection of other publisher ad servers (versus Google's own publisher ad server) with Google's ad exchange. Specifically:

- Google's ad exchange only submits real time bids in Google's publisher ad server (but not in other publisher ad servers); and
- Google will not submit bids from Google's ad exchange through the same publisher tools that other exchanges use. Instead, to access demand from Google's ad exchange, other publisher ad servers must provide Google's ad exchange with the 'last look' information advantage.

Up until September 2019, all auctions run by Google's ad exchange were 'second price auctions'. In a 'first price auction' a buyer will pay the price it bids. But in second price auction, the winner pays the price bid by the second highest bid, plus one cent. Coupled with the 'last look', this meant that Google could bid last after everyone had already submitted their bids and win an impression for one cent more than the highest bidder, allowing Google to secure more ad inventory than its competitors. In September 2019, following pressure from publishers and ad tech players to shift to a first-price auction model, Google introduced the unified auction. This is illustrated in **Figure 26 below**. In the '*Unified first-price Auction*', all the sources of demand bid at first price at once. Under this system, bids from direct

deals are compared with all of a publisher's non-guaranteed advertising inventory in a single first-price auction.

Figure 26: Google introduces Unified First-Price Auction



Google's move to a first-price auction was slow in comparison to the rest of the industry. Other exchanges, (including Index Exchange, Open X and Rubicon Project) had begun rolling out first-price auctions in 2017.⁹⁶ In order to counter the effects of first price auctions, a practice known as 'bid shading' had developed. Bid shading is essentially an algorithm employed by DSPs to deploy an automated bid strategy with the objective of reducing the amount paid for ad inventory. The algorithm works based on information: it collects and analyses historical data about all transactions to build a bidding or purchase model. The data variables may include win rate, ad size, cost, exchange used, URL, webpage, category, and others. The more information available to the algorithm, the better it will work in deploying the bid strategy of securing the lowest price for the available ad inventory. The algorithm then determines a bid that will win the auction but is not more than the impression is 'worth' based on the data available to it.

⁹⁶ Tim Peterson and Seb Joseph, "It's going to be a big change for us': Google's adoption of first-party auction creates migration headaches for buyers", Digiday, 8 March 2019, <<https://digiday.com/marketing/first-party-auction-google-creates-headaches-buyers/>>.

Box 4: Bid Shading

Bid shading refers to the use of an algorithm created by DSPs that helps advertisers pay less for impressions. Examples are The Trade Desk's *Koa* and Google's *DV360* 'optimized fixed CPM'. These algorithms, utilising machine learning capabilities, input historical data such as site, ad size, exchange and competitive dynamics to enable advertisers to pay as little as possible without impacting their win rate. It is estimated that this tactic has reduced the price of winning bids on publisher inventory by up to 20%.

The processes behind bid shading are not new, but saw a resurgence following the introduction of first-price auctions. This is because first-price auctions require the advertiser to bid the amount it is willing to pay. The risk of overbidding is greater in a first-price auction compared to a second-price auction. The use of bid shading in a first-price auction reintroduces some of the advantages for advertisers of a second-price auction; advertisers are able to reduce their bid to between what are forecast to be the first and second highest bids.

Bid shading services are offered by DSPs and exchanges, including The Trade Desk (with its product, *Koa*), Rubicon Project (with its product, Estimated Market Rate, released at the end of 2017) and PubMatic (with Intelligent Bidding released in February 2018).⁹⁷ Google's DV360 began offering its bid shading tool, 'optimised fixed CPM bidding' in 2018 for free.⁹⁸ Google continues to offer bid shading tools (known as automated bid strategies) via DV360.⁹⁹

As a result of the widespread use of bid shading the first price model has been undermined such that the first price auction has effectively had no impact. Further, Google has a significant informational advantage through its position along the ad tech supply chain, its access to ad inventory and associated data and access to other data throughout the ad tech supply chain. It can use this informational advantage to build an algorithm which is more informed than any other bid shading algorithm. This means that in practice, Google will retain the ability to secure ad inventory at the lowest possible price. This places further downward pressure on average CPMs (i.e. the prices at which ad inventory is sold) since Google represents and is responsible for such significant volumes of demand. In the absence of bid shading, News considers that 'clearing' prices would be higher for ad inventory sold through first price auctions than second price auctions. Moreover, a pure first price auction (without bid shading) would support the integrity of the auction system as the winning bidders' clearing prices would be identical to the bids submitted by their DSP. As explained previously, this would not necessarily result in higher costs for advertisers.

Google removes ability to set separate price floors

At the beginning of April 2019, Google imposed another set of restrictions that reintroduced advantages for Google's ad exchange. This is illustrated in **Figure 27 below**. As a result, unified pricing rules reduced publisher control within Google's ad server. Prior to Google's universal pricing rules, publishers could set separate price floors by buyer or bidder. When a seller faces asymmetric bidders in an auction, it is optimal to set a higher reserve price (price floor) for the stronger bidder. This incentivises the stronger bidder to engage in less 'bid shading',¹⁰⁰ which improves revenue for the auctioneer (in this case, the

⁹⁷ Sarah Sluis, Everything you need to know about bid shading, AdExchanger, 15 March 2019, <<https://www.adexchanger.com/online-advertising/everything-you-need-to-know-about-bid-shading/>>.

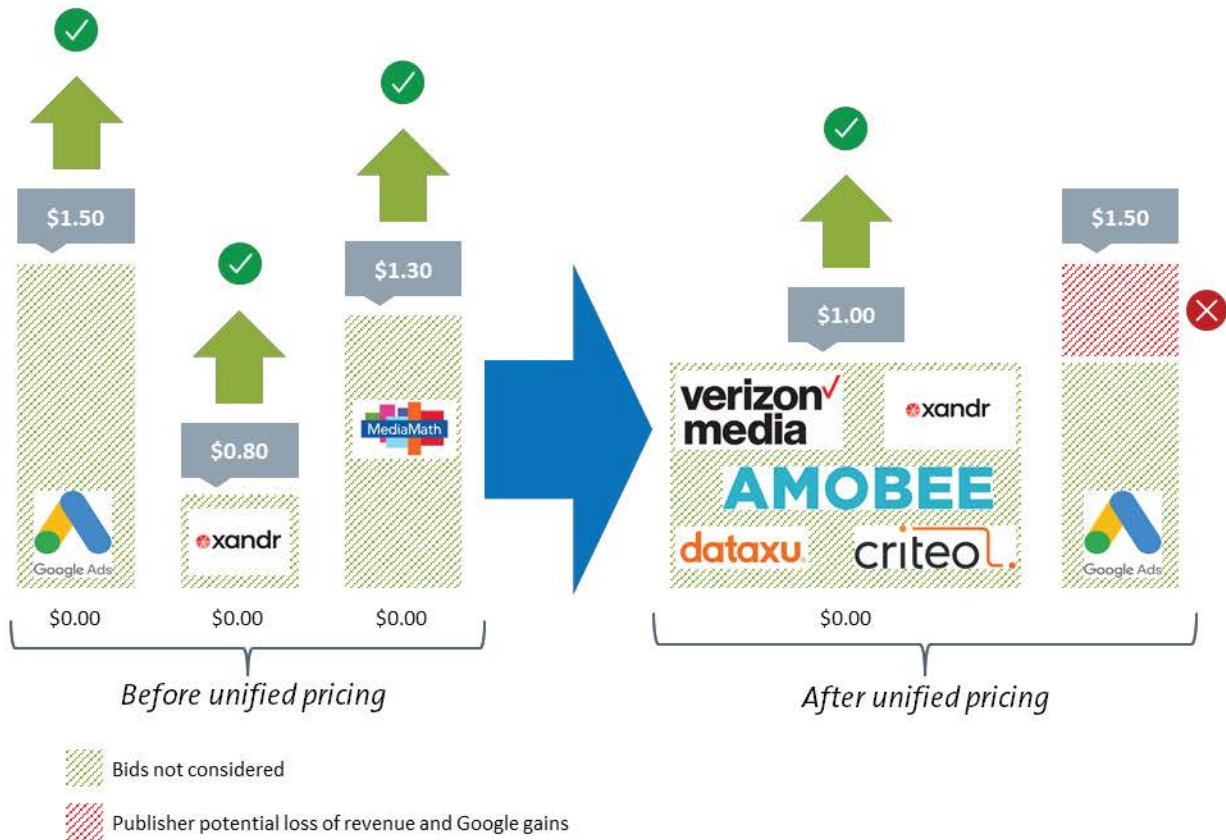
⁹⁸ Sarah Sluis, Everything you need to know about bid shading, AdExchanger, 15 March 2019, <<https://www.adexchanger.com/online-advertising/everything-you-need-to-know-about-bid-shading/>>.

⁹⁹ Google Support, Automated bid strategies, <<https://support.google.com/displayvideo/answer/2997422?hl=en>>.

¹⁰⁰ See further, Sarah Sluis, Everything you need to know about bid shading, Ad exchanger, 15 March 2019, <<https://www.adexchanger.com/online-advertising/everything-you-need-to-know-about-bid-shading/>>.

publisher). Google's exclusionary conduct, including its informational advantages, imply that publishers have a strong incentive to set higher reserve prices for Google's ad exchange. This partially (but not fully) mitigates Google's artificial advantages. Following the rule change, publishers must use the same price floor **for all buyers and bidders**. As a result, publishers cannot run optimal auctions that require Google DSPs to pay for artificial information advantages. This creates opportunities for arbitrage for Google, as explained at **page 33 above**.

Figure 27: Google's unified pricing rules reduce publisher control within Google's ad server



[REDACTED]

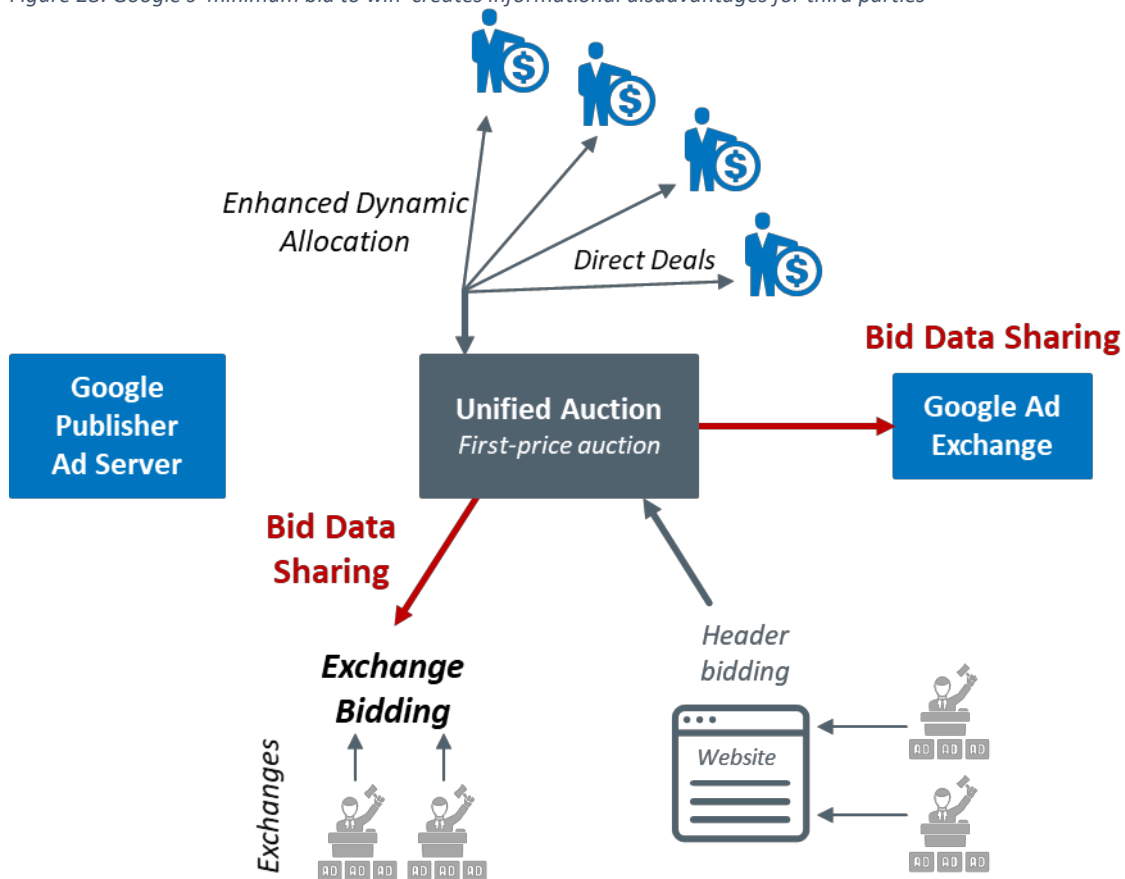


In September 2019, Google introduced restrictions on publisher data, reducing publishers' ability to optimise demand partners, and as a consequence, revenues. Publishers sell ad inventory to advertisers using visitor data, with consent from visitors, to provide visitors with more meaningful advertisements at lower cost. Google's publisher ad server DFP removed publishers' ability to link bid data to sales data.

Publishers' ability to link bid data to sales data is necessary to evaluate demand partners and promote healthy ad exchange competition. Historically, publishers have estimated the incremental revenue from demand partners. For example, if OpenX wins an auction for \$4 CPM through header bidding over a bid of \$2 CPM from Exchange Bidding, OpenX adds \$2 CPM of incremental revenue. Ad exchanges compete by providing greater incremental revenue. This is necessary for assessing whether the auction is being operated efficiently and with integrity. Without this data, this assessment is not possible.

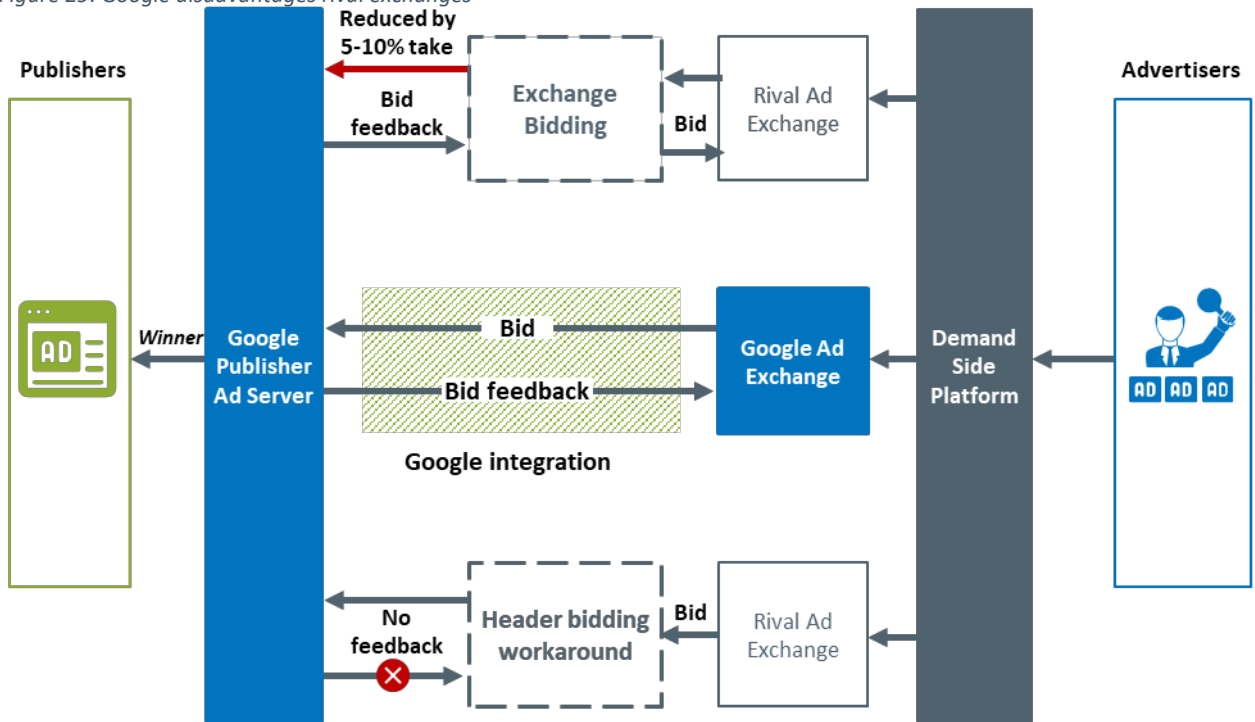
In September 2019, Google began sharing additional data with buyers in Google's ad exchange and Exchange Bidding. This further disadvantaged publishers' header bidding partners. Google named this change as 'minimum bid to win', and is illustrated in **Figure 28 below**. This shows that in the exchange, advertisers buying ad inventory through Google's services, i.e. those using Google's ad exchange or participating in exchange bidding, receive feedback on auction results, receiving information on the lowest bid that would have won (the 'minimum bid to win'), and can use that data to inform future bidding strategies. Only buyers in Google's ad exchange and Google Exchange Bidding can receive this feedback, putting buyers in header bidding at a significant disadvantage.

Figure 28: Google's 'minimum bid to win' creates informational disadvantages for third parties



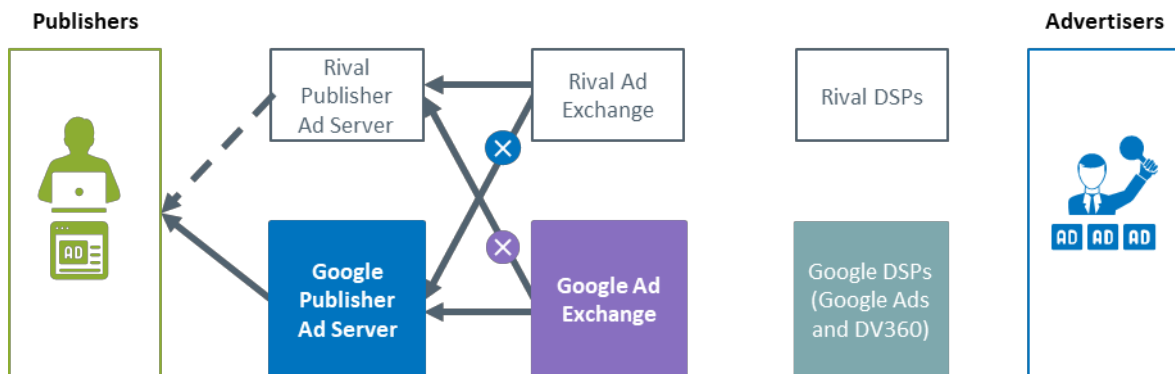
The effect of the behaviour above is to disadvantage rival exchanges which must either forego minimum bid to win and face an information disadvantage, or face a 5-10% additional fee by using Google's ad exchange. This is illustrated in **Figure 29 below**. 'Minimum bid to win' provides Google's ad exchange and its customers information advantages in circumstances where Google refuses to provide the same information to header bidding. As outlined above, Exchange Bidding disadvantages rival exchanges and the efficiency of the auction.

Figure 29: Google disadvantages rival exchanges



In a healthy market with competition, publishers would select ad servers with access to the same demand, and ad servers would compete on the basis of software efficiency and value to publishers. However, as illustrated in **Figure 30 below**, Google effectively refuses interoperability between Google's publisher ad server and rival exchanges by Google's ad exchange not providing real time bids to rival ad servers.

Figure 30: Real time bids not provided to rival ad servers

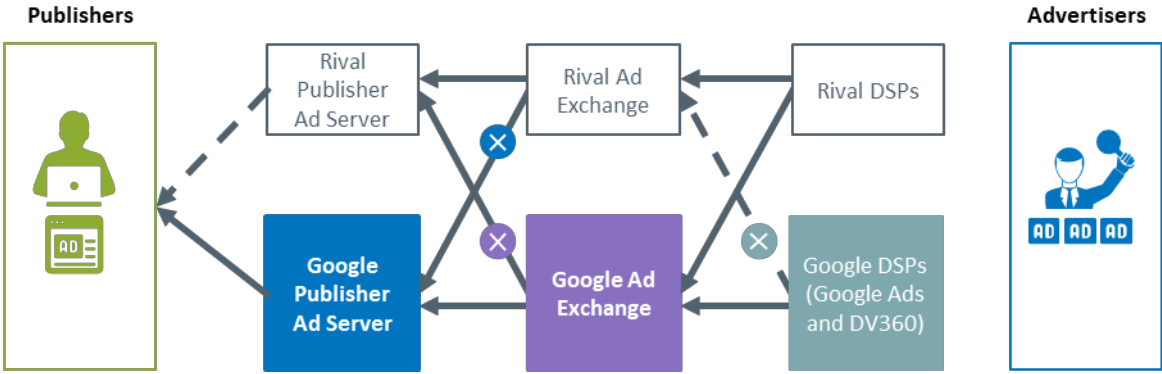


Conduct in relation to demand side platforms

Google also uses its market power in Google's ad exchange, AdX and its buy-side properties, Google Ads (ex AdWord) and DV360 (which is now part of the Google Marketing Platform), to support its market position in the publisher ad server and ad exchange markets. This is illustrated in **Figure 31 below**.

A competitive market would have frictionless multi-homing between DSPs and ad exchanges. However, Google uses its buy-side technologies to obtain and maintain Google's substantial market power in ad exchanges: Google Ads disproportionately sends demand to Google's ad exchange; and DV360 sends demand disproportionately to Google's ad exchange, and not to rival ad exchanges, limiting rival ad exchanges' ability to compete. Google only offers YouTube through its own advertiser tools, although YouTube ad inventory was previously sold on Google's ad exchange. Google only offers Google Search inventory through Google Ads.

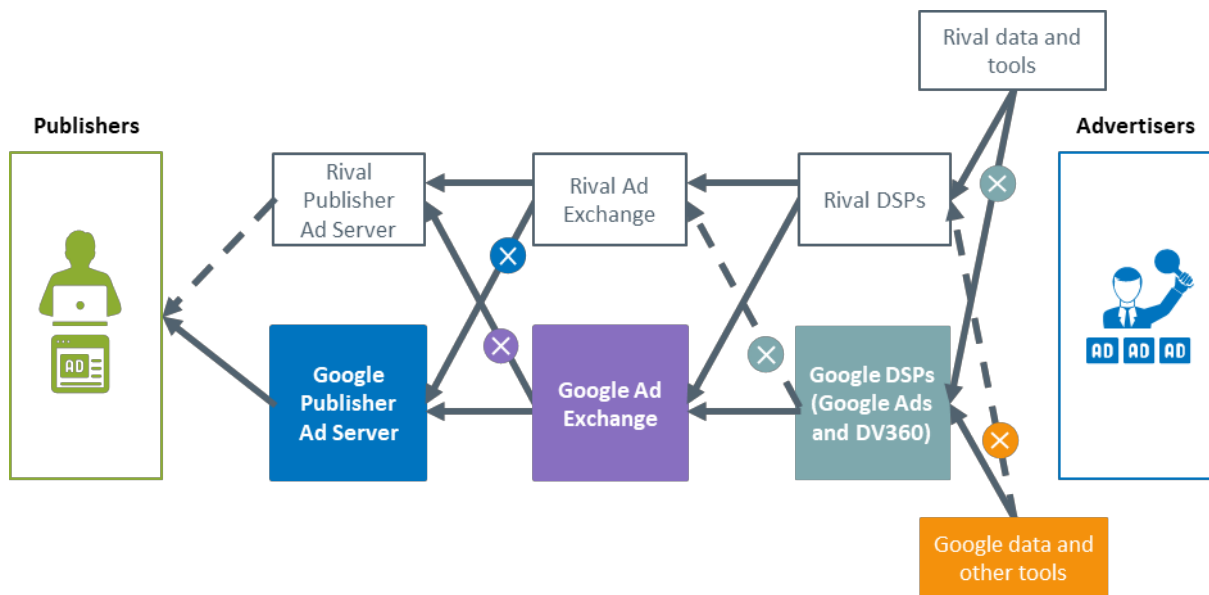
Figure 31: Competition between ad exchanges requires access to sufficient demand from DSPs



Limiting access to data

Google also uses its buy-side properties (Google Ads and DV360) to further limit competition in the demand-side platform (DSP) market by limiting access to **data**. This is illustrated in **Figure 32 below**. Data on consumers collected from other Google products (e.g. Search, Android, Maps, Gmail) are fed into Google Ads and DV360. Google then restricts advertisers from using rival tools and data with Google DSPs, thereby forcing advertisers which want access to additional data on consumers collected via Google to use Google's own tools, instead of third-party tools.

Figure 32: Limiting access to data restricts competition between DSPs



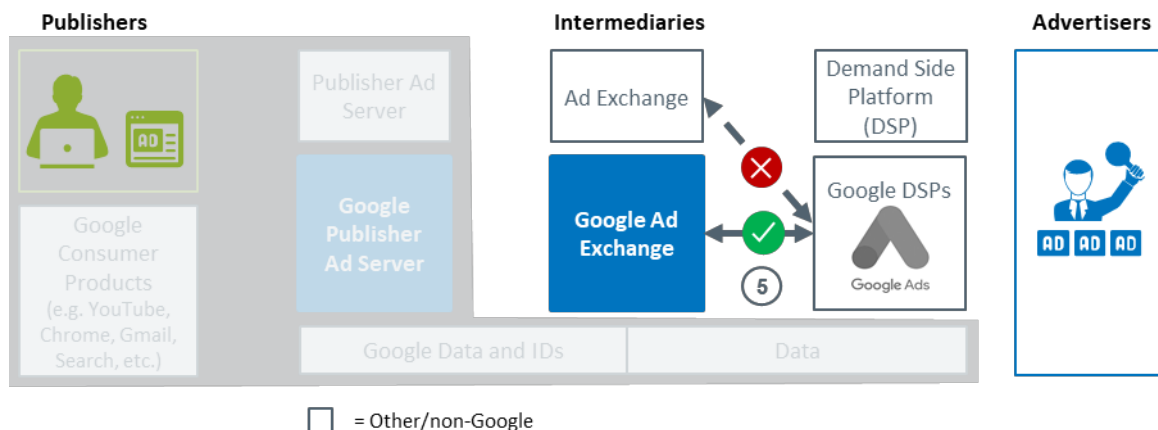
Moreover, YouTube's ad serving restriction gives Google complete control over advertisers' data on YouTube. Historically, advertisers on YouTube could use non-Google ad servers to measure performance independently and verify the data supplied by YouTube. In May 2019, Google mandated that all non-Google ad servers use a Google Application Programming Interface (**API**) to serve ads on YouTube. Google has complete control over advertisers' access to ad data on YouTube: e.g. definition of data categories, variety of data categories, and level of aggregation. Google excludes rival ad servers from providing independent and differentiated ad measurement to advertisers and excludes rival analytics tools from providing more sophisticated independent analytics. This prevents non-Google ad servers and analytics firms from competing equally with Google, and differentiating through innovation.

Google Ads

Further, Google Ads (a buy-side platform that operates as both an ad network and advertiser ad server) does not bid on non-Google ad exchanges. The effect and impact of this is illustrated in **Figure 33 below**.

Google Ads (formerly known as, AdWords) is a self-serve advertiser-side tool used to buy Google Search and display ads. Advertisers use Google Ads to purchase ads by bidding on keywords and segments. For many small to medium businesses, Google Ads is a single stop shop for hosting creative, managing campaigns, targeting, bidding, optimisation and billing. In 2009, Google Ads expanded to submit bids for display inventory to Google's ad exchange, AdX. Rival exchanges are excluded from Google Ads' demand: this means that AdX is the only ad exchange accessible to advertisers using AdWords. Google Ads buyers (i.e. advertisers) would benefit from being on more exchanges to reach more consumers, but this is sacrificed by Google in favour of greater control over the entire ad tech ecosystem.

Figure 33: Google Ads (a Google DSP) does not bid into competing exchanges



The effect of this conduct is that Google Ads is an unavoidable trading partner, which also reinforces the position of Google's ad exchange (AdX) as the dominant exchange, thereby further raising barriers to competing ad exchanges expanding or entering.

AdX

Google has also changed the way in which participants can use and access data on AdX, by limiting use of third-party tools while simultaneously forcing participants to use Google's own tools. The following developments demonstrate how this has occurred:

- Before 2016, data collected through **DoubleClick** (e.g. web browsing records, ad data) using tags on websites and data collected from other **Google services** (e.g. Gmail data, Chrome browser sign-in data, and other personally identifiable information) were kept separately in isolated silos.
- In 2016, Google changed its privacy policy (see **Figure 34 below**) so that Google could combine consumer-level DoubleClick data with data from other Google services. Users have to opt out to stop Google combining this data.
- This amplified **Google's advantage in ad targeting** across services in ways unavailable to rivals.

Figure 34: Google's June 2016 Privacy Policy Update permitting merger of DoubleClick data with other Google data

We may combine personal information from one service with information, including personal information, from other Google services – for example to make it easier to share things with people you know. We will not combine DoubleClick cookie information with personally identifiable information unless we have your opt-in consent. Depending on your account settings, your activity on other sites and apps may be associated with your personal information in order to improve Google's services and the ads delivered by Google.

While Google has enhanced its own ability to track and identify users it has simultaneously increasingly limited the ability of third parties to do the same. Due to Google's dominance in advertiser and publisher tools, Google's identifier became the most popular identifier for publishers and advertisers to track event-level customer data. Google combines publisher and advertiser data with data from Google's consumer-facing services (e.g. Gmail, Android). There is no alternative consumer-level ID which matches the reach of Google's consumer ID. By way of illustration, Google tracking tags are present on ~80% of all web domains, enabling Google IDs unrivalled ability to match consumer-level IDs.

However, in 2018, Google announced that it would **limit third-party access to Google's consumer IDs**. The move restricted how advertisers and publishers perform analytics, forcing them to choose between:

- switching to a non-Google ad server, which is costly and complex; or
- relying on Google's full set of ad tech products – particularly Ads Data Hub, Google Cloud, and Google Analytics – and trusting Google's unverified and unverifiable data and measurements.

In contrast, Google's DSP competitors (Xandr, The Trade Desk, LiveRamp, and MediaMath) continue to share consumer IDs which form a common language between those competitors.

Box 5: Cookies

Websites gather data from a user's browser by using tracking 'cookies'.¹⁰¹

Web cookies are small text files that websites deposit onto a user's browser. These files track users, recording and reporting back to the website about which sites a user visits and items purchased.

Cookies are set by servers. When a user visits a webpage (e.g. www.theaustralian.com.au), the browser calls the web server to fetch the content of the webpage. When the web server responds, it instructs the browser to store a cookie with a unique user ID. When the browser visits the same domain in the future, it will give the web server this user ID – the server can now recognise the browser. Each domain sets a different user ID for the same user.

Websites aggregate all this information into two buckets:

1. behavioural data they have on what kinds of sites you've looked at, how much time you've spent on them, and whether you bought anything; and
2. demographic information that they've estimated based on these online behaviours, such as your age, educational level, family status, income bracket, and interests.

This information is then used to tailor ads to users along two different parameters:

- what a user does i.e. behavioural targeting; and
- who the user is (i.e. demographic targeting).

Recently, Google has restricted advertisers' use of their preferred data in targeting on YouTube, Google Search and Gmail. This prevents advertisers from using competing targeting data and forces use of Google's own tools (at a price).

Advertisers attempting to target consumers selectively to receive ads will usually create a target list with associated consumer IDs such as emails and cookie IDs (see **Box 5 above** for an explanation of 'cookies' and further explanation of the importance of cookies, user and consumer IDs in the response to **questions 13 to 16 below**). The target lists might be created from advertisers' existing customer database or website visitor history, or independent data providers (eg, DMPs, data brokers, Google). However, on YouTube, Google Search, and Gmail, Google now prohibits advertisers from using advertisers' preferred data. This forces advertisers to use Google data (bundled with other Google products) and excluded independent DMPs. It prevents advertisers from using competing targeting data and data providers.

¹⁰¹ Elizabeth Anne Watkins, Guide to Advertising Technology, Columbia Journalism Review, 4 December 2018, <https://www.cjr.org/tow_center_reports/the-guide-to-advertising-technology.php>, page 4.

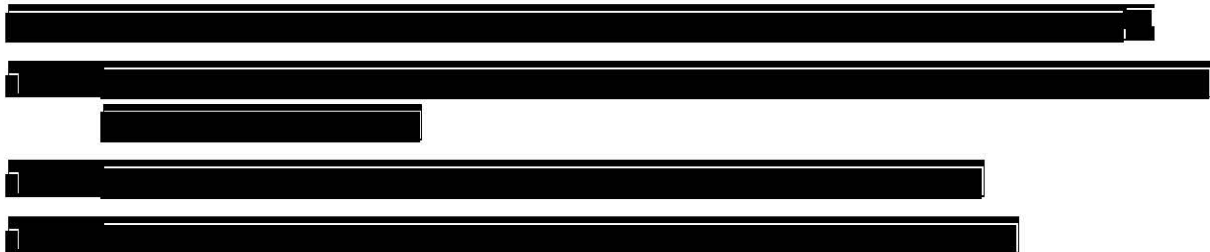
More recently, Google has announced major changes to its Chrome browser, which have made it harder for Google's rivals to identify users. At the same time, Google will continue to track significant data on consumers. As a result of this, audience targeting and tracking for ROI analytics using advertising cookies is restricted in Chrome. This is important because it allows advertisers to assess the performance of their advertisements and advertising campaigns between different ad inventory (i.e. websites), and ultimately between different media (i.e. online, offline, etc). Google is able to rely on other methods to collect the same data. Therefore, it will not impact Google, but will impair Google's rivals that track with cookies (e.g. Oracle DMP). This is further explained in the response to **questions 13 to 16 below**.

Conclusion on competitiveness of markets

The above analyses illustrate the lack of competitiveness which characterises each market in the ad tech supply chain. The ad tech supply chain is not operating efficiently or competitively, and is therefore failing as a mechanism for price discovery and the efficient matching of publishers' ad inventory supply with advertiser demand. This is because Google's conduct:

- excludes third parties from participating in RTB, while allow its own exchange to do so;
- provides an informational advantage to Google and users of Google's products; and
- undermines the auction process by giving Google the 'last look' advantage.

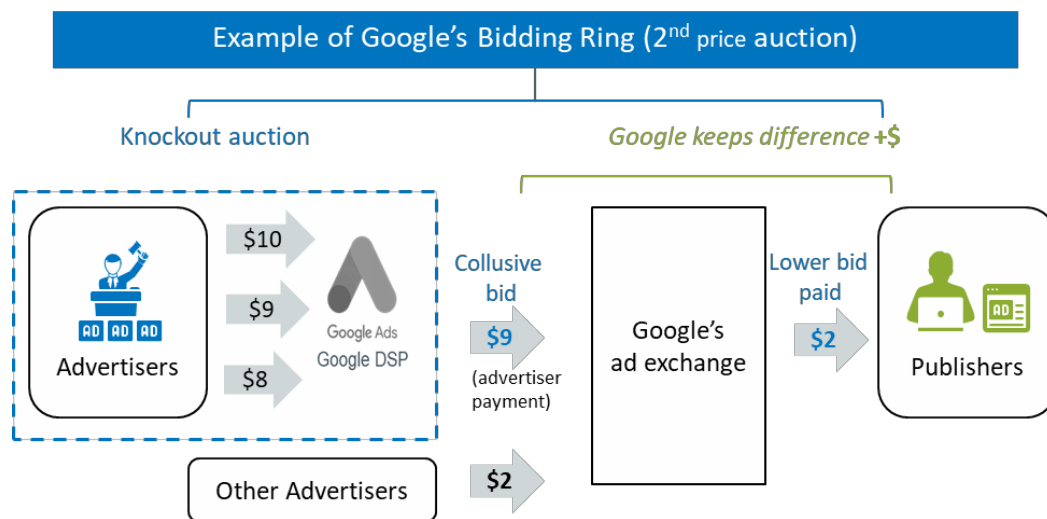
Ultimately, in News Corp Australia's view, Google's conduct allows Google to maximise its take rate. Google's exclusionary conduct reduces competitive pressure on Google's ad tech products, which in turn means that Google can operate sequential ad auctions to maximise advertisers' payments in Google Ads and minimise publisher payments in Google's publisher ad server, DFP, as illustrated in **Figure 35 below**.



This illustrates that Google may decrease prices over time by limiting the strength of other exchanges' demand.

102 [Redacted]

Figure 35: Google's bidding ring – sequential auctions which favour Google



3. Do ad tech suppliers provide their customers with services that reflect the cost of providing that service and/or the value of that service to the customer?

There is a lack of transparency regarding cost and value within the ad tech supply chain, particularly in relation to Google's integrated ad tech services. As the UK Competition and Markets Authority has noted, "[m]arket participants typically do not have visibility of the fees charged along the entire supply chain".¹⁰³ Publishers in particular, including News Corp Australia, are concerned about the lack of visibility of fees being paid by advertisers to intermediaries such as DSPs "reducing their ability to negotiate directly with advertisers" and thereby limiting competitive pressures on DSPs.¹⁰⁴

There are concerns about the lack of clarity on the level and structure of Google's 'end to end' commission (i.e. the share of advertiser spend that ultimately accrues to Google versus the publisher and other actors within the ad tech stack). These concerns are twofold:

- **First**, there are a variety of respects in which the level of fees charged by Google through the tech stack are not communicated.¹⁰⁵
- **Second**, there are concerns that Google has implemented auction structures which facilitate the opportunity to arbitrage. In particular, the two-step auction structure in which AdWords runs an initial auction between its own advertisers and then a second auction takes place between Google on behalf of the winner of the AdWords auction and other advertisers, which, in News

¹⁰³ Competition and Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>, page 201.

¹⁰⁴ Competition and Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>, page 201.

¹⁰⁵ We understand that the fee charged by AdWords to advertisers is not described in AdWords terms of use and that AdWords converts advertisers' bids from a "cost per click" value into a "cost per thousand impressions" value, that AdX can subsequently adjust at its own discretion for the purpose of optimizing the auction. Both AdWords' conversion and AdX's adjustment can be used by Google to charge an additional fee, undisclosed to both advertisers and publishers.

Corp Australia's view, provides arbitrage opportunities for Google.¹⁰⁶ Studies conducted in the UK suggest that publishers only receive a share ranging between 40-70% of the revenue from display advertising due to the costs of ad intermediation services.¹⁰⁷ We consider that this is reflective of the position in Australia.

The lack of transparency deprives customers of the opportunity to determine whether the costs are reflective of the services being provided. The fact that it is almost impossible to determine precisely the fees charged by ad exchanges,¹⁰⁸ underscores the opacity that characterises this market.

¹⁰⁶ We understand that this two-step auction dynamic will continue following the move to “unified pricing”.

¹⁰⁷ See Plum Consulting, Online advertising in the UK, 12 February 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 64 which highlights that fees taken by intermediaries could leave the publisher with less than 0.45 in the pound.

¹⁰⁸ Sarah Sluis, Explainer: More on the Widespread Fee Practice Behind The Guardian's Lawsuit V. Rubicon Project, AdExchanger, 30 March 2017, <<https://www.adexchanger.com/ad-exchange-news/explainer-widespread-fee-practice-behind-guardians-lawsuit-vs-rubicon-project/>>.

Concentration of market power

Market structures: ad tech services

5. Who are the main competitors in the supply of the following ad tech services in Australia? Please provide market shares estimates wherever possible.
- (a) publisher ad servers
 - (b) supply-side platforms and ad exchanges? (Note: To the extent that these services are fully integrated, they will be considered as a single entity. If you consider these functions to remain separate, please provide separate information for supply-side platforms and for ad exchanges.)
 - (c) ad networks
 - (d) demand-side platforms
 - (e) advertiser ad servers

(a) Publisher ad servers

DFP is Google's publisher ad server, now rebranded as a module within Google Ad Manager. [REDACTED]

[REDACTED]¹⁰⁹

The only other publisher ad server active in Australia recognised by News Corp Australia is AppNexus (now a Xandr company after being acquired by AT&T in mid-2018).

As explained above, News Corp Australia considers that publisher ad servers are distinct products and should be considered separately from ad exchanges.

(b) Ad exchanges

As explained above, News Corp Australia considers the terms SSPs and 'ad exchanges' to be interchangeable since SSPs no longer play an integral role in the ad tech supply chain and there has been a convergence between the two types of services.

Google's ad exchange, AdX is now part of Google Ad Manager. Google acquired independent supply-side platform (SSP) AdMeld in 2011, and has also since absorbed its SSP) functions into Google's ad exchange, AdX. AdX is estimated to capture 55.15% of the programmatic ad exchange market in Australia.¹¹⁰

Ad exchanges active in Australia include: AppNexus (Xandr), Rubicon Project, OpenX, Sovrn, Index Exchange and PubMatic.

¹⁰⁹ [REDACTED] Stephen Adshead, Grant Forsyth, Sam Wood and Laura Wilkinson, Online advertising in the UK, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 60.

¹¹⁰ Datanyze, Market Share Category: Ad Exchanges, as at 13 May 2020, <<https://www.datanyze.com/market-share/ad-exchanges-399/Australia>>.

(c) Ad networks

Google's AdSense is effectively a pool of inventory of display advertising from a range of places including more than 2 million publishers.¹¹¹ AdSense can reach 90% of all webpages on the internet.¹¹² AdSense's market share in Australia is 28.31%.¹¹³ Along with Google Ads (45.70%)¹¹⁴ Google collectively accounts for 74.01% of the ad network market in Australia.

However, there is little utility in this category of services as a separate category to ad exchanges, and both should be considered within the same market for the supply of ad intermediation services, however this position is without prejudice to the possibility of further segmentation of the market for the supply of ad intermediation services, for example, between ad exchanges and ad networks. In practice, ad networks, like Google Ads, are simply online software services that an advertiser might use to purchase ads. From the perspective of an advertiser, whether this software taps into a single ad network or 10 ad exchanges is not relevant. Google Ads is the technology that an advertiser can use to purchase inventory (i.e. buying software) and AdSense is a pool of inventory that Google Ads hooks into.

In addition to Google's services, ad networks in Australia include Criteo, Playground XYZ and Big Mobile.

(d) Demand side platforms

Google's DoubleClick Bid Manager, which is now integrated into DV360, a part of Google's advertiser facing integrated Google Marketing Platform, holds 72.50% of the market share in DSPs in Australia.¹¹⁵

DSPs currently active in the Australian market include: AppNexus (Xandr), The Trade Desk, Adobe Ad Cloud, Amobee and Facebook's Audience Network (which since April 2020 is only available for mobile apps).

(e) Advertiser ad servers

Google holds the largest market share in relation to advertiser ad servers, through Campaign Manager (now within Google Marketing Platform).¹¹⁶ The 2018 opinion of the French Autorité de la concurrence highlighted Google's 'significant position on these markets', noting estimates of up to 65%.¹¹⁷ Facebook also operates in this market for third-party website display inventory through its Audience Network, although as of 11 April 2020, this platform only operates for mobile applications. Other competitors active in Australia include AppNexus, One (AOL), Mediamath, TubeMogul and DataXu (acquired by Roku in 2019). Other advertiser ad server competitors are Sizmek (acquired by Amazon following its bankruptcy in 2019) and AdZerk.

¹¹¹ MonetizePros, The Ultimate Guide to AdSense & Ad Networks, 4 June 2015 <<https://monetizepros.com/ad-sales/guide-to-adsense-ad-networks/>>; Websites Using Google AdSense, Built With, 2018, <<https://trends.builtwith.com/websitelist/Google-AdSense>>.

¹¹² Mike Rhodes, Parts 1 & 2 The Display Grid: How to Scale Your AdWords Display Campaigns Profitably with Laser-Focused Targeting and the Right Choice of Ad Type, Digital Marketer, 11 May 2017, <<https://www.digitalmarketer.com/scale-google-display-campaigns/>>.

¹¹³ Datanyze, Advertising Networks, as at 13 May 2020, <<https://www.datanyze.com/market-share/advertising-networks--9/Australia>>.

¹¹⁴ Datanyze, Advertising Networks, as at 13 May 2020, <<https://www.datanyze.com/market-share/advertising-networks--9/Australia>>.

¹¹⁵ Datanyze, Demand Side Platforms, as at 13 May 2020 <<https://www.datanyze.com/market-share/dsp--65/Australia>>.

¹¹⁶ See e.g. the finding that Google is the "market leader" on the demand side of the programmatic intermediary market (for non-video display advertising), in Stephen Adshead, Grant Forsyth, Sam Wood and Laura Wilkinson, Online advertising in the UK, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 12.

¹¹⁷ Autorité de la concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, available in English at <https://www.autoritedelaconcurrence.fr/sites/default/files/integral_texts/2019-10/avis18a03_en_.pdf>, page 86.

6. For each service in the ad tech supply chain, do any firms have the ability to profitably raise prices or lower quality without losing customers?

Publisher ad servers

Within the industry, Google is regarded as dominant in the market for ad servers for publishers, and referred to as "the dominant solution in the market"¹¹⁸ since "nearly every publisher on the planet uses it to sell ads."¹¹⁹ A 2015 Forbes article referred to a crash of Google's publisher ad server, DFP, affecting more than 55,000 websites as "a stark reminder of how an established player like Google has quietly achieved dominance over the so-called 'ad tech' industry."¹²⁰

As outlined above, due to the interoperability between Google's ad tech services, Google's publisher ad server, DFP, which is now part of Google Ad Manager, is a 'must have' product. Accordingly, publishers cannot use other ad servers in conjunction with Google Ad Manager. Google is therefore be able to raise prices or lower quality without losing publisher customers.

Advertiser ad servers

Google holds the largest market share in the supply of advertiser ad servers through its advertiser ad server, Campaign Manager (now within Google Marketing Platform).¹²¹

DSPs

[REDACTED]
[REDACTED] Facebook is also active in this market through its platforms Audience Network (only in relation to mobile apps).

The absence of other large competitors in the market and the access to exclusive ad inventory (such as display advertising on the Facebook App, YouTube and Google Search) and data available to the Google DSP and Facebook DSP mean that these platforms are 'must have' products in the ad tech stack. In addition, Google operates its publisher ad server, ad exchange and DSP to channel more demand to those services thereby reinforcing its substantial market power.

For advertisers, extra costs associated with using third-party DSPs and ad servers through header bidding under Google's Exchange Bidding (the extra 5% commission, 10% for video) (as explained in response to **question 2 above**), Google's informational advantage in bidding (also known as 'last look'), and the fact that the new 'minimum-bid-to-win' feature is only available to bidders using Google's integrated means that Google Ad Manager and Google Display Network are 'must-have' products. In News Corp Australia's view, it would be possible for Google to profitable raise prices and/or lower quality without losing customers given these facts.

¹¹⁸ Sarah Sluis, AppNexus Rolls Out Publisher Suite To Take On Google, AdExchanger, November 2015, <<https://adexchanger.com/platforms/appnexus-rolls-out-publisher-suite-to-take-on-google/>>.

¹¹⁹ George Slefo, Google and GDPR hand publishers a hard choice, Adage, 30 April 2018, <<https://adage.com/article/digital/google-gdpr-force-a-hard-choice-publishers/313305>>.

¹²⁰ Allen Grunes, Google's Quiet Dominance Over The 'Ad Tech' Industry, Forbes, 26 February 2015, <<https://www.forbes.com/sites/realspin/2015/02/26/googles-quiet-dominance-over-the-ad-tech-industry/#1448aaca5b78>>.

¹²¹ See e.g. the finding that Google is the "market leader" on the demand side of the programmatic intermediary market (for non-video display advertising), in Stephen Adshead, Grant Forsyth, Sam Wood and Laura Wilkinson, Online advertising in the UK, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 12.

¹²² [REDACTED]

Ad Exchanges

As outlined in **section 3.2 above**, Google holds a large share of the supply of online ad intermediation services, including ad exchanges. Publishers that use these services experience difficulties in using third-party ad tech services with Google's ad exchange. This is because advertisers may prefer not to use third-party exchanges to access Google's Exchange Bidding (a form of server-side header bidding run on a Google server).¹²³ Doing so attracts additional costs for advertisers, through the 5% commission (10% in the case of video) that Google imposes on rival exchanges using Exchange Bidding. Furthermore, the full demand from Google Ads is not available on third-party exchanges.

This makes Google Ad Manager a 'must-have' product for publishers wanting to access a large portion of demand from advertisers. This is further reinforced by the introduction of the new **unified pricing rules** (see detailed discussion in **section 5.1(f) above**) which gives buyers using Google's ad exchange and Exchange Bidding a 'last look' after the auction of the minimum bid to win, an important informational and bidding advantage for Google.

As with Google Ads and Google Advertising Network, because Google Ad Manager is a 'must have' product, publishers would be disadvantaged by moving to third-party ad exchanges. Consequently, it would be possible for Google to profitably raise prices or lower quality of its services without losing customers. In 2019, Nexstar Media Group Inc., the largest local news company in the USA stopped using Google's ad tech services to sell ad inventory on its websites. Over the ensuing days, the company's video ad sales fell significantly and as a result, the publisher lost revenue.¹²⁴ Despite the anecdotal nature of such evidence, it does reveal the difficulties facing publishers and their inability to switch to another platform if Google does raise prices or lower the quality of its services.

Data management platforms

The market for DMPs providing third-party display advertising buying solutions is potentially more competitive with a number of competing suppliers, which largely operate globally, including LiveRamp (22.54% market share in Australia), Oracle DMP (22.12% market share in Australia), Adobe Audience Manager (12.56% market share in Australia), Lotame (9.58% market share in Australia) and 21 other DMPs with market shares in Australia under 10%.¹²⁵ However these DMPs are facing increasing pressure from Google's integrated data management and analytics platform (for advertisers) Google Marketing Platform (and to a lesser extent Google Ads).

Google Marketing Platform has its own inbuilt DMP (formerly Google 360). Google Marketing Platform does allow data collected by other DMPs used by the advertiser to be input for use in its analytics service. However, as noted above in response to **question 2**, the bundling of data sets from Google's consumer-facing products with Google advertiser-facing platforms, the exclusion of non-Google Data Management Platforms (DMPs) from tracking ads on Google Display Network (**GDN**), and the exclusion of cross-site cookies on Chrome means that most advertisers will still need to use Google Marketing

¹²³ This is distinguished from client-side header bidding which Google's AdX does not participate in and which is not possible on Google's AMP pages.

¹²⁴ Keach Hagey and Vivien Ngo, How Google Edged Out Rivals and Built the World's Dominant Ad Machine: A Visual Guide, Wall Street Journal, 7 November 2019, <www.wsj.com/articles/how-google-edged-out-rivals-and-built-the-worlds-dominant-ad-machine-a-visual-guide-11573142071>.

¹²⁵ Datanyze, Market Share Category: Data Management Platforms, as at 14 May 2020, <<https://www.datanyze.com/market-share/dmp--64/Australia?page=1>>.

Platform. It follows that Google can raise prices or lower the quality of these platforms without worrying that advertisers will make a complete switch to third-party data management and analytics programs.

Market structures: Display advertising services

10. Who are the main suppliers of display advertising services in Australia?

11. Do any of these suppliers have the ability to profitably raise prices or lower quality without losing customers in the market for display advertising services in Australia?

The main supplier of display advertising inventory in Australia is Facebook, and Google is the main supplier of display advertising intermediation services including to publishers such as News Corp Australia.¹²⁶

The market for buying display ads is primarily facilitated by Facebook's integrated platforms and Google's ad tech services. It has been estimated that display advertising will make up 17.7% of the total internet advertising by 2023, and video itself will account for 22.4%.¹²⁷

Facebook accounted for 24% of all online advertising spend in Australia in 2018.¹²⁸ Moreover, it is the leading social media platform globally and within Australia,¹²⁹ with 95% of Australian consumers using social networking using the Facebook app.¹³⁰ Facebook also owns Instagram, which is another leading source of display ad inventory in Australia and has seen significant increases in demand from advertisers. Because advertisers can only buy display ads on the Facebook and Instagram apps through Facebook Ads, Facebook can raise the prices or lower the quality of its services because there is no other platform that allows advertisers to reach those consumers.

Google's display advertising services, including its ad tech platforms Google Ad Manager, Google Ads, Google Marketing Network, Google Display Network, AdSense and AdMob are all dominant in their respective markets. The majority are 'must have products' and given the integrated nature of Google's products, as explained above in **question 2**, the bundling of Google's superior data with its services and the tying of Google's premium ad inventory to its display advertising services, users are much more likely to 'single-home' on Google display advertising services. Moreover, Google is dominant in the supply of search advertising, with a large proportion of Australian consumers using only the Google platform for internet searching.¹³¹ Therefore, the use of Google's display advertising services for search advertising is critical to advertisers who want to be able to reach this large number of consumers. This means that advertisers and publishers have little choice when prices are raised or quality is lowered as

¹²⁶ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 122 section 3.1.2.

¹²⁷ PWC, Internet Advertising, 2019, <<https://www.pwc.com.au/industry/entertainment-and-media-trends-analysis/outlook/internet-advertising.html#explore>>.

¹²⁸ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 122 section 3.1.2.

¹²⁹ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 12.

¹³⁰ Productivity Commission, Data Availability and Use Final report, 31 March 2017, <<https://www.pc.gov.au/inquiries/completed/data-access/data-availability-use-government-response.pdf>>, page 573.

¹³¹ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 95.

there are, realistically, no other suppliers that can offer the advantages of Google's scope across the display advertising market.

In News Corp Australia's view, other than Google and Facebook, no other supplier of display advertising services, including News Corp Australia, could profitably raise prices or lower the quality of its service because there are alternatives to all other forms of display advertising. However, for Google and Facebook, the same competitive alternatives are not available to advertisers and publishers and accordingly, they both possess significant market power. For Google, it is the vast troves of data that the advertisers may indirectly access to assist in targeting, when accessing display advertising services through Google Ad Manager, Google Ads and other Google services. For Facebook, it is the opportunity to target consumers individually on Facebook platforms (including Facebook and Instagram) which no other display advertiser can offer.

Further, it is unclear to Google's and Facebook's customers – advertisers and publishers – what are the actual price(s) for ad tech services, and whether the price(s) paid reflect the value of the services provided because of, as explained in **section 5.2 above**:

- the lack of transparency into how Google and Facebook rank and display advertisements;
- the extent to which they self-preference their own platforms; and
- the opacity of the ad tech supply chain at all levels furthered by platform integration.

It is therefore unclear to advertisers and publishers when prices are in fact raised, and/or quality is in fact lowered, and whether it is worth it for them, or whether they should switch to other providers.

The role and use of data

12. Who are the main competitors supplying the following data services in Australia? Please provide market share estimates wherever possible.

- (a) data management platforms**
- (b) data brokers**
- (c) data analytics services, and**
- (d) ad measurement and verification services.**

(a) Data management platforms

DMPs collect, store and manage data collected from various sources (i.e. first-party, second-party and third-party user data) to be used to target specific users and contexts in digital advertising. These data are used by different actors in the ad tech supply chain, including DSPs and ad exchanges.

Some DMPs also offer publishers the possibility to purchase third-party data sets (e.g. demographics) from a data exchange. The purchased data sets can then be layered on top of the publishers' first-party data for additional audience segmentation.

The following companies provide DMPs in Australia: Adobe Audience Manager, BlueKai (Oracle), MediaMath, Salesforce Data Management Platform (Audience Studio), Lotame, Nielsen DMP, and

Amobee. News Corp Australia is unable to provide market shares for these providers, however believes that Adobe Audience Manager and Salesforce Audience Studio are the two largest DMPs, and that a third player – likely Lotame – holds a much smaller market share.

(b) Data brokers

The following companies operate as data brokers in Australia:

- **Acxiom:** Acxiom deals with publicly available information, information from surveys, and data from other providers. It has records of consumer offline personally identifiable information which is offered to perform matches. Some data services offered by Acxiom include audience segmentation and activation, data appending (the appending of user profiles with known attributes), and offline data matching.
- **Experian:** Experian deals with publicly available information, information from surveys, data from other providers and credit bureau data.
- **Quantium:** Quantium, which sources data primarily from supermarket transactions from Woolworths and transaction data from NAB, focuses on providing audience segmentation and activation, insights and measurements.
- **Liveramp:** Liveramp's key service is the onboarding of offline data to the digital environment, which it does using identity models. Liveramp partners with companies that have direct relationships with end consumers, obtaining personally identifiable information and digital identifiers across an extensive network of websites.
- **Eyeota:** Eyeota deals primarily with third-party data, partnering with data owners to collect site browsing data as well as some declared data.
- **Flybuys:** Flybuys is a more recent provider of data broking services. It deals with retail sales transaction data from Coles and approximately 25 other Australian retailers.

(c) Data analytics services

The following companies provide data analytics services in Australia: Nielsen, Integral Ad Science, Moat and comScore.

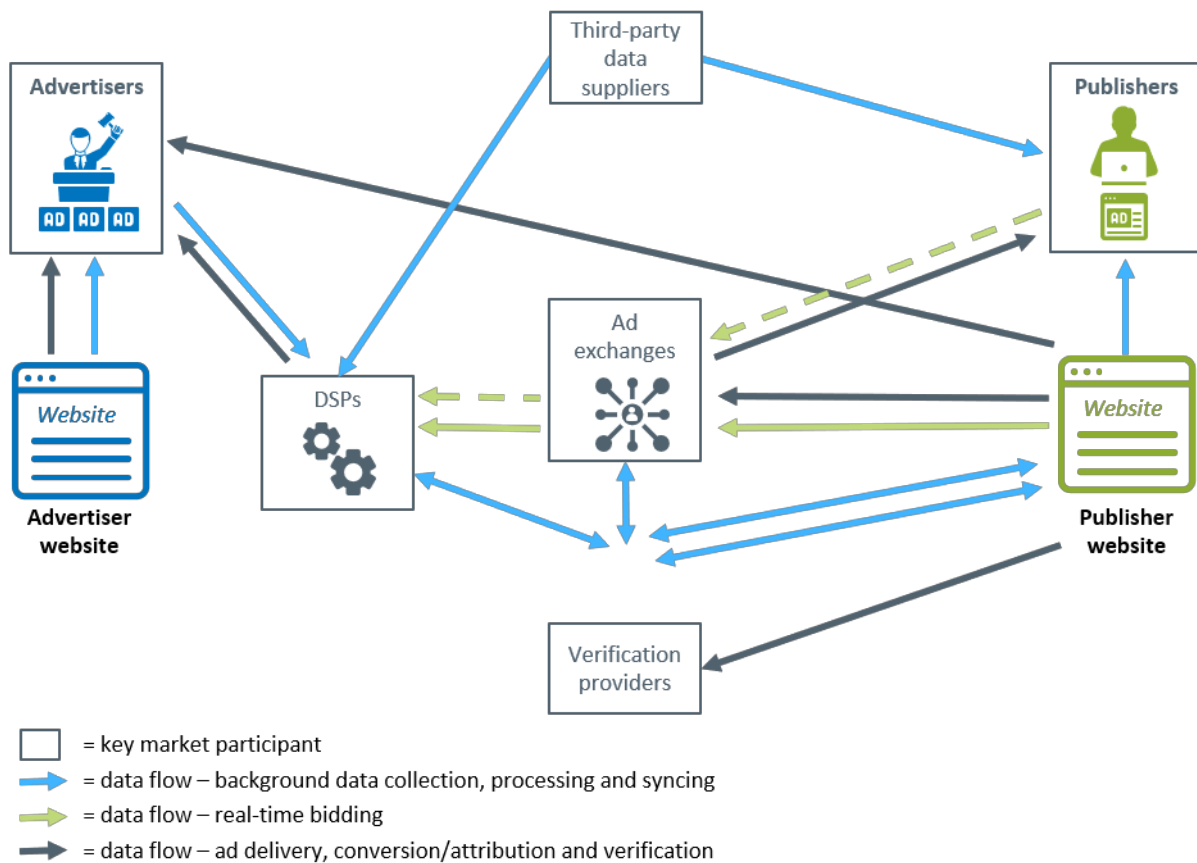
(d) Ad measurement and verification services

Ad verification providers verify whether the ad was actually viewed by a real audience (and not by bots) and served along brand safe content. They typically charge on a CPM (cost-per-mille) which means cost per thousand basis. The following companies provide ad verification services in Australia: Integral Ad Science, Moat, comScore and DoubleVerify.

13. What types of data are of value to ad tech services providers? Do ad tech services providers and ad agencies use both personal and non-personal information?
14. Do different types of ad tech services use different types of data?
15. How is the data used to assist ad tech functions?
16. Are any other participants in the data supply chain relevant to the supply of ad tech services or ad agency services?

Data is an essential part of the ad tech supply chain. The very nature of programmatic advertising, which seeks to provide data-based targeted advertising matched to users, makes data a key resource for participants across the ad tech supply chain. Data flows throughout all levels of the ad tech supply chain, as illustrated in **Figure 36 below**.

Figure 36: Data flows in the programmatic desktop display advertising value chain



Source: Adapted from Plum Consulting, *Online advertising in the UK* (January 2019), p78

Data is a key resource for publishers and advertisers. Publishers and advertisers are reliant on the vast datasets collected by large digital platforms such as Google and Facebook. The ability of large digital platforms to amass unrivalled quantities of quality user data is a key contributor to their market power in digital advertising markets. In addition, as a vertically integrated ad tech service provider, Google is able to leverage significant data from auction and bidding processes.

Google and Facebook are able to leverage vast datasets, collected from users' activities across multiple platforms and devices. All datasets are not equal. The value of the datasets held by Google and

Facebook lie in the volume of data, the diversity of sources, the accuracy and reliability of the data, and its velocity. These datasets are particularly high quality because much of the data is authenticated: it is sourced from users logged into Google's and Facebook's services. The quality of Google's and Facebook's datasets, combined with the quantity of user data they are able to collect, enables significant economies of scale and scope and provide them with a data advantage. The European Commission in its *European Strategy for Data* noted that:

"The high degree of market power resulting from the "data advantage" can enable large players to set the rules on the platform and unilaterally impose conditions for access and the use of data or, indeed, allow leveraging of such "power advantage" when developing new services and expanding towards new markets."

Types of ad tech data

There are broadly two groups of data that are of value to publishers and advertisers:

- data related to ad tech bidding and bid requests, including pricing data; and
- data collected about users, including technical and metadata.

This section of the submission outlines News Corp Australia's views in relation to the value and use of each of these types of data.

(a) Bidding data

It is important that publishers are able to access and match bidding data and impression-level data for bids for advertising inventory on their websites. This allows publishers to understand how their inventory is being sold and to optimise yield on their advertising inventory.

Google, due to its presence throughout the ad tech supply chain, has access to a significant amount of bidding data. Publishers receive from Google:

- bid data transfer files that include Google's bidding data; and
- an impression data transfer file that includes the impression-level data for their pages (i.e. information on an impression-by-impression basis, including bids of header bidding demand partners).

As explained previously, in June 2018 Google decided to rebrand its publisher ad server (DFP) and its ad exchange (AdX) under the umbrella platform, Google Ad Manager. Google Ad Manager does not provide publishers with a single file combining data from its ad server (i.e. bidding data) and its ad exchange (i.e. impression-level data). As a result, publishers reconciled separate Data Transfer files, using two corresponding fields in the Data Transfer files, to create a holistic picture of their inventory and optimise their ad yield strategy accordingly.

Until late 2019, publishers were able to link these datasets in order to make intelligent business decisions and optimise yield on their advertising inventory. However, as part of the transition to a unified first price auction, Google announced in September 2019 that "*publishers...will not be able to join the Bid Data Transfer file with other Ad Manager Data Transfer files*".¹³² The implications of this

¹³² Jason Bigler, Rolling out first price auctions to Google Ad Manager partners, Google, 5 September 2019, <<https://www.blog.google/products/admanager/rolling-out-first-price-auctions-google-ad-manager-partners/>>. GKSS 509122973v33 120912951 15.5.2020

announcement are that publishers are no longer able to link the bidding data coming in from Google's ad exchange, AdX, to impression-level data received from Google's publisher ad server, DFP. This interferes with publishers' ability to holistically audit their auctions. Further:

- it has become impossible for publishers to understand and compare how specific demand coming from Google's ad exchange compares to demand from competing demand sources;
- while publishers have to deal with two completely irreconcilable files, Google continues to be able to see all losing bids and therefore can continue to optimise its own bidding strategy;
- publishers lose the incentive to partner with competing (i.e. non-Google) exchanges through header bidding because publishers are unable to measure their success compared to the dominant source of demand (Google's ad exchange);
- rival ad tech providers may find it increasingly difficult to demonstrate how they add value for publishers;¹³³ and
- the changes in the bid data transfer files restrict publishers from measuring the value of their own first-party data and audiences.

It is crucial for News Corp Australia and other publishers to link the data included in the separate data transfer files in order to obtain, test and implement strategies to understand various demand sources and accordingly increase their ad yield among the different channels.

More generally, there is a significant imbalance in relation to bidding data in the ad tech supply chain. Significantly more data is available on the advertiser buy side (i.e. demand side) rather than the publisher sell side (i.e. supply side). A well-functioning, competitive ad tech marketplace should be characterised by an equal distribution of bidding / pricing data across both the buy side and the sell side. The current ad tech supply chain, in which Google's products are pervasive, is weighted in favour of providing more data to the buy side, which makes it difficult for publishers to set an informed or considered price floor, and as a result, this drives ad tech auction prices down.

In addition to this, the bidding data provided by Google anonymises groups of advertisers as 'Unclassified Advertisers'. This means that publishers cannot analyse which companies are buying their inventory and so leaves them unable to create a full picture of the auction and set price floors accordingly.

¹³³ This was accepted by the Competition and Markets Authority in the UK, see Competition Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>, page 207, paras 5.222 – 5.223. GKSS 509122973v33 120912951 15.5.2020

(b) User data

Data collected by Google and Facebook

Google's position in the ad tech stack is supported and reinforced by Google's broad ecosystem, including the extensive identification and tracking of users, building datasets, compiling data on these users and cross-selling products to advertisers.¹³⁴ Similarly, Facebook is able to track users across a number of mobile applications, including Facebook, Instagram and WhatsApp, and devices.

Digital platforms, such as Google and Facebook, collect a large volume of first-party data from their own services including via logged-on users across devices and services:

- Facebook collects data including user content, communications, location, devices, networks of friends, contacts, usage, transactions on Facebook products, information provided by others on Facebook, as well as personal data provided at sign up;¹³⁵ and
- Google collects data from various sources including user devices, browsers, apps, search terms, video views, voice information, purchase activity, contacts, Chrome browsing history (in certain cases), location and personal data, such as name, phone number and email address.¹³⁶

Google also collects information about activity on third-party sites and apps that use Google services.

Facebook also collects information from social plugins embedded on publisher webpages (e.g. 'like' or 'share' buttons on publishers' websites). The information collected from these buttons is commercially valuable data about publishers' readers. This data is then used to sell Facebook advertising, permitting interest-based targeting – targeting based on a user's interests and preferences – for buyers.

Table 1 below outlines the type of data collected by Google's various ad tech services, and News Corp Australia's understanding of how the data is used by Google.

Table 1: Data collected by Google

Google ad tech service	Data collected	The use and value of this data
Google Ad Manager	<p>Publishers using DFP (within Google Ad Manager) install a tag provided by Google on their webpages. When a user visits the publisher's webpage, the tag is triggered and initiates an ad request, whereby the browser calls Google's servers (typically doubleclick.net). As part of the ad request, certain pieces of information from the website are shared with Google:</p> <ul style="list-style-type: none">• page URL;• HTTP header (which includes information about the user's browser type, operating system of the user's device, date and time);• IP address of user's device (used to infer location);	<p>Google uses this data to provide DFP (within the Google Ad Manager service) to the publisher by sharing the collected data through bid requests addressed to interested bidders participating in the auctions organised by Google Ad Manager.</p> <p>News Corp Australia does not know the extent to which Google uses the data for purposes other than providing the Google Ad Manager service to the publisher.</p> <p>This data enables Google to identify the user (through the user identifier in the ad request) and associate it with geolocation information (through IP address) and browsing history (through the page URL). Given that DoubleClick is ubiquitous across the web, Google is able to track the same user as they browse across different</p>

¹³⁴ [REDACTED]

¹³⁵ Stephen Adshead, Grant Forsyth, Sam Wood and Laura Wilkinson, Online advertising in the UK, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 73.

¹³⁶ Stephen Adshead, Grant Forsyth, Sam Wood and Laura Wilkinson, Online advertising in the UK, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 74.

Google ad tech service	Data collected	The use and value of this data
	<ul style="list-style-type: none"> user identifier which may be (a) DoubleClick cookie ID or (b) mobile device identifier (in the case of apps); and certain custom parameters (key value pairs). 	<p>webpages and build a detailed user profile, which can then be exploited for selling targeted advertising.</p>
Google Analytics	<p>A publisher using Google Analytics installs on its webpage tracking code provided by Google. The Google Analytics tracking code collects the following types of data:</p> <ul style="list-style-type: none"> page URL; referring site; IP address; cookie ID (stored in first-party cookie set on the publisher's domain); browser information; device information; and behavioural data (i.e. user interaction with the online property such as: time spent, click events, video plays and quartiles). 	<p>According to its web support manager, Google may always use the collected data in order to provide, maintain and protect the Google Analytics service. Depending on the publisher's precise configuration of the data sharing settings in the Google Analytics user interface, Google may use the collected data for additional purposes, not necessarily related to the provision of Google Analytics service. Google may use the data to:</p> <ul style="list-style-type: none"> improve its own products and services (e.g. its online advertising services); analyse market trends for benchmarking purposes; and provide technical support and customised suggestions. <p>Google may also merge data collected from Google Analytics with data collected through other Google products.</p>
Google Ads	<p>In order to track conversions and enable remarketing campaigns with Google Ads, a publisher install snippets of code provided by Google on all of its webpages. In particular, these snippets of code include:</p> <ul style="list-style-type: none"> the Google Ads conversion tracking tag, which stores and sends back to Google information about a user's interaction with the advertiser's ad, including conversion information; and the Google Ads remarketing tag, which captures information about the user while interacting with the website where it is installed. 	<p>This data enables Google to count conversions and therefore report on the effectiveness of campaigns run through Google Ads. It also enables remarketing campaigns, which <i>"is a way to connect with people who previously interacted with your website or mobile app"</i>, allowing publishers to <i>'strategically position [their] ads in front of these audiences as they browse Google or its partner websites, thus helping increase [their] brand awareness or remind those audiences to make a purchase'</i>.¹³⁷</p>
DV360 (which is now part of Google Marketing Platform)	<p>Marketers using DV360 may install on their webpages tags in order to measure conversions and run remarketing campaigns. A 'floodlight activity', previously called a pixel, is a piece of HTML code provided by Google that tracks conversions and adds users to remarketing lists. The marketer first creates a floodlight activity within DV360, whereby it defines the floodlight tag format as either a global site tag or traditional iframe tag or image tag.</p> <p>The generated tag is then inserted in the webpage. When the tag fires, it sets new cookie in the publisher's domain (first-party cookie) to identify the user.</p> <p>The marketer may also use the floodlight tag in order to create audience lists, which can then be used for remarketing campaigns. In both cases, the data collected</p>	<p>This data enables Google to count conversions and thus report on the effectiveness of campaigns run through DV360. It also enables remarketing campaigns (see above).</p>

¹³⁷ Google, About remarketing, <<https://support.google.com/google-ads/answer/2453998?hl=en-AU>>.

Google ad tech service	Data collected	The use and value of this data
	will include: user ID, page URL, IP address and any information from the HTTP header.	

Digital platforms' data advantage

Facebook and Google hold a number of advantages in relation to collecting and leveraging data:

- users stay logged in to many of Facebook and Google's services across a number of devices, allowing identification of users based on registration data, across devices and browsers;
- the advantage of high reach across the Australian population; and
- the breadth and depth of user data collected across multiple categories, including:
 - for Google – registered user sign-up data, on Google platform data, device data, off-platform data, location data, Internet of Things data and payment data;¹³⁸ and
 - for Facebook – various personal data (registered user sign-up data, on Facebook platform data, on other owned and operated platform data i.e. Instagram, WhatsApp and Messenger) and off platform data collection (device data and payment data when financial transactions are made on Facebook platforms such as in game purchases and donations).¹³⁹

In circumstances where publishers have access only to limited first-party data in the form of data from registered users or subscribers that access content on their webpages, publishers face challenges following users across different device and browser environments. The fact that publisher data is less 'deep' and joined up than data available to Google and Facebook means that News Corp Australia must seek access to datasets held by platforms such as Google and Facebook, making them non-negotiable trading partners in data.

The role of cookies

One way in which Google and Facebook gather data about users is from 'tracking cookies', which are pieces of code that track users, recording and reporting back to the website about which sites the user visits and the goods/services the user purchases (see **Box 5 above** at **page 58** for further information). When a publisher uses Google's publisher ad server, DFP (now rebranded as a module within Google Ad Manager) to manage its advertising inventory, the publisher installs in its webpage an 'ad tag', which when triggered initiates an ad request, whereby the browser calls Google's servers. As a part of this ad request, publishers share certain important pieces of information with Google, including the user identifier in the form of a cookie (the cookie ID). These third-party cookies enable Google to track the same user as they browse across different webpages and build a detailed user profile which can be used for selling targeted advertising. Tracking through third-party cookies should be anonymous, as it is based

¹³⁸ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 87-88.

¹³⁹ ACCC, Digital Platforms Inquiry: Final Report, June 2019, <<https://www.accc.gov.au/system/files/Digital%20platforms%20inquiry%20-%20final%20report.pdf>>, page 84-85.

on random user IDs. However, Google has the ability to associate the user IDs it sets in cookies (e.g. through doubleclick.net) with Google Accounts (i.e. personal information of the user).¹⁴⁰

An ad exchange typically sends bid requests to participating buyers (e.g. DSPs) including the cookie ID it has assigned to the particular user. However, each ad tech vendor assigns the same user (more accurately: the same browser) a different cookie ID (e.g. ad exchange 1 assigns a user the cookie ID '123' but DSP 2 assigns the same user the cookie ID 'abc'). It is therefore necessary for the various vendors to match their cookies so that the buyer will know that, for example, user '123' in ad exchange's database equals user 'abc' in its own database. This information allows the buyer to properly evaluate the particular impression and bid accordingly.

To overcome the inefficiencies inherent in cookie syncing, industry stakeholders have tried to build solutions based on a common ID. Examples include: DigitTrust, the Ad ID Consortium, ID5 and the Trade Desk Unified ID. These common IDs operate by:

- one company with a large cookie footprint offering its ID to be adopted by all ad tech vendors; and
- other ad tech vendors use the same common ID to identify the user – they all 'speak the same language' and consequently avoid the inefficiencies in cookie syncing.

However, the success of these common ID initiatives has been limited, most likely because the company with the largest cookie footprint, Google, refuses to participate in them.

Box 6: First-party vs third-party cookies

Cookies are divided into first- and third-party according to the domain that sets them.

When the domain that sets the cookie is the same domain the user visits, the cookie is **first-party**.

When the domain that sets the cookie is different than the domain the user visits, the cookie is **third-party**.

Most web-pages include elements for third parties, such as a piece of code that when executed instructs the browser to call a different server/domain (e.g. call the ad server to fetch the ad to be displayed). When called by the browser, the third party can set its own cookie to identify the user, being the **third-party cookie**.

If code from the same third party (e.g. Google) is present in multiple webpages, this party can track the user across the web (using the unique user ID of its third-party cookie) and build a detailed profile.

Google's tracking is ubiquitous: it tracks users across approximately 80% of websites.¹⁴¹ Even prior to the acquisition of DoubleClick by Google, DFP had the largest cookie footprint on the web as the most widely used publisher ad server. Since Google's acquisition, DFP has become the default ad server for the majority of publishers

Impact of removal of third-party cookies from Google Chrome

On 14 January 2020, Google announced that it plans to phase out support for third-party cookies in Google Chrome within two years.¹⁴² While some browsers have blocked third-party cookies – Apple's

¹⁴⁰ Professors Douglas Schmidt, Google Data Collection, Digital Context Next, August 2018, <<https://digitalcontentnext.org/wp-content/uploads/2018/08/DCN-Google-Data-Collection-Paper.pdf>>.

¹⁴¹ Steven Englehardt & Arvind Narayanan, Online Tracking: A 1-million-site Measurement and Analysis, 2016, <https://www.cs.princeton.edu/~arvindn/publications/OpenWPM_1_million_site_tracking_measurement.pdf>.

¹⁴² Justin Schuh, Building a more private web: A path towards making third party cookies obsolete, Chromium Blog, 14 January 2020, <<https://blog.chromium.org/2020/01/building-more-private-web-path-towards.html>>.

Safari browser and the Firefox browser – with Google Chrome's significant market share in web browsing (estimated globally as in excess of 64%), it is clear Google's policy change in relation to Chrome will have a significant impact on ad tech. Third-party cookies are an essential part of many advertising functions, such as behavioural targeting, frequency capping, retargeting and conversion tracking.

Google has stated that third-party cookies are to be replaced by mechanisms designed to preserve privacy and open standards like the Privacy Sandbox, a set of APIs.¹⁴³

However, little detail has been provided about how the Privacy Sandbox will operate. The basic concept of the Privacy Sandbox is that tracking will move to the browser, meaning that the browser, and not cookies, will track the user. This means that all user-level data will be stored in the browser and will not be available to third parties. As a result, in order to perform advertising functions (e.g. frequency capping, targeting, etc), marketers and ad tech vendors will access aggregated data, rather than the underlying user-level data, through a series of APIs.

News Corp Australia holds significant concerns that the replacement of third-party cookies with the Privacy Sandbox will enable Google to control another element of the ad tech supply chain. The removal of third-party cookies will also reduce the ability for smaller ad tech service providers to efficiently and effectively compete with Google, including through innovation. Third-party cookies, while imperfect, are currently an essential part of the ad tech supply chain from a data perspective.

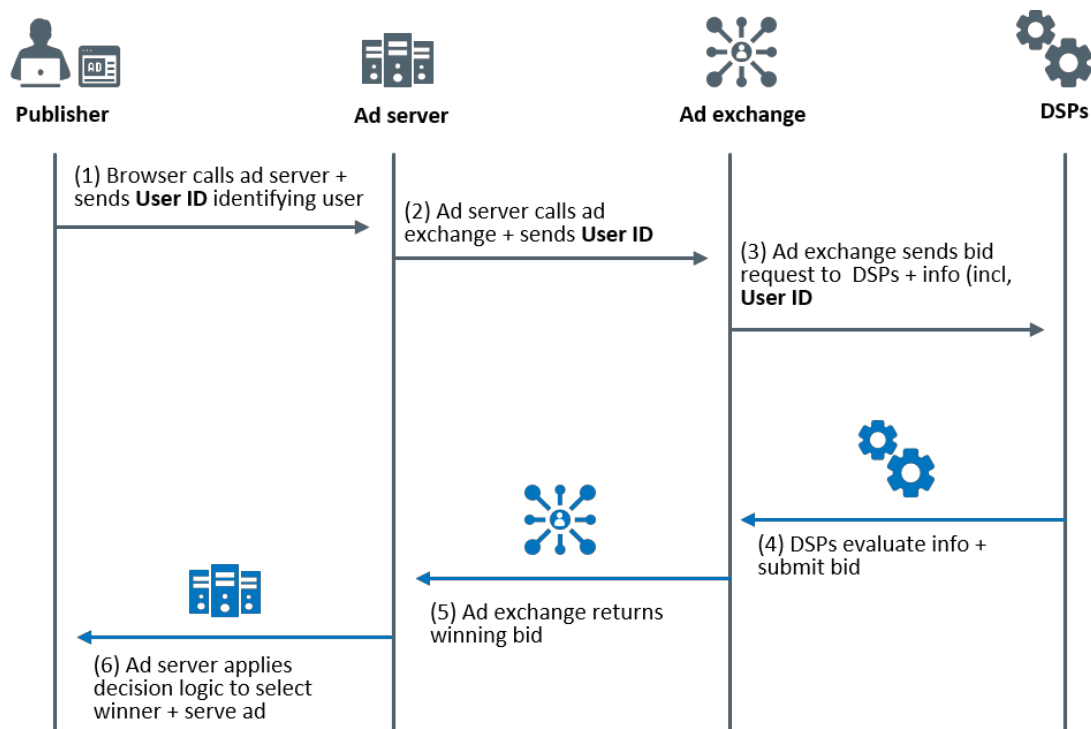
Following the phase out of third-party cookies, Google's ability to identify users on a one-to-one basis will remain intact, and it will remain insulated from the policy change because it will be able to identify users browsing the open web. Publishers, advertisers and Google's competitors in the ad tech supply chain will be dependent on Google's APIs for identifying users. Therefore, it is more than likely that the phasing out of third-party cookies in Chrome – and the introduction of the Privacy Sandbox – will further entrench Google's position in the ad tech industry because Google will control another part of the ad tech supply chain (APIs in the browser), while remaining insulated from the impact itself due to its large first-party audience.

Importance of user IDs

The ad tech industry has developed complex systems for joining up data across the supply chain to give advertisers and publishers information about impressions. Programmatic advertising uses pseudonymous data containing an individual identifier (user IDs – as described above), with links to all personal data removed. **Figure 37 below** demonstrates the role of user IDs as part of an ad tech bid request.

¹⁴³ Justin Schuh, Building a more private web: A path towards making third party cookies obsolete, Chromium Blog, 14 January 2020, <https://blog.chromium.org/2020/01/building-more-private-web-path-towards.html>; See also Justin Schuh, Building a more private web, Google, 22 August 2019, <<https://www.blog.google/products/chrome/building-a-more-private-web/>>.

Figure 37: User IDs in a bid request



Publishers and others in the ad tech supply chain – including Google's ad tech competitors – must join up user IDs (for example, through cookie matching) because different participants create different IDs for the same user. The scale at which the digital platforms can create user segments and insights cannot be matched by individual publishers, which results in these platforms being more successful at activating these segments and insights through paid advertising. This problem is compounded by the fact that the platforms do not directly remunerate News Corp Australia for being the source of this data and collect data across all publishers.

The ability of ad tech services providers to monetise data is inextricably linked to their ability to identify the particular user on the basis of user identifiers (in the case of the web, cookie IDs). As a result, publishers like News Corp Australia rely on their demand partners' (ad exchanges and buyers participating in exchange auctions) ability to identify users based on user IDs and functionality that enables user ID matching across multiple datasets. As part of this process, publishers do not have access to users' personal information; they only have access to anonymised user IDs. This process of identifying and matching user IDs is a feature of ad tech transactions and occurs in a matter of seconds.

The following examples illustrate the importance of being able to identify users and user IDs.

Example 1: Google Ads / DV360 benefit from AdX integration

After acquiring DoubleClick, and once Google launched its ad exchange in 2009, Google's publisher ad server, DFP started to restrict competitors' access to the DoubleClick IDs of publishers' readers. Specifically, Google's publisher ad server started to 'hash' or encrypt the IDs per customer. This increases the 'loss rates' of competing exchanges and DSPs because they are required to match

cookies, causing advertisers to not bid or bid lower on average.¹⁴⁴ At the same time that Google's publisher ad server restricted how others could access these user IDs, it started sharing these user IDs with Google's ad exchange, AdX, AdWords/AdSense, and Google's DSP (DV360).

This is why Google explains that its buy-side solutions (Google Ads, DV360) operate on the same infrastructure as its dominant ad exchange (AdX), and that these advertisers benefit from minimal cookie match loss rates when using Google Ads or DV360 to buy ads on Google's ad exchange. This confers a significant advantage to Google Ads and DV360 over other DSPs, because advertisers bidding through them on AdX impressions will be able to best identify the user (and bid accordingly), while competing DSPs will have to go through the inefficient cookie matching process, meaning that in many cases they will not identify the user (with the consequence that advertisers bidding through them will bid lower or not at all).

Example 2: Client-side versus server-side header bidding

As explained above on **page 25**, in client-side header bidding, participating exchanges are called directly by the browser and thus can read the cookie they have set in the past for the same user.

In server-side header bidding, participating exchanges are called by the provider of the server-side bidding solution (e.g. Google in the case of Exchange Bidding), not the browser. Participating exchanges therefore cannot retrieve their cookies and have to instead rely on matching their cookie IDs to those of the provider of the server-side solution. This benefits the provider of the server-side solution – Google, in the case of Exchange Bidding – in case it participates in the auction, as it will be the only one able to read its cookie and directly identify the user.

In the case of Exchange Bidding, Google has a considerable advantage in identifying the user across the ad tech value chain (from Google Ad Manager receiving the ad request until Google Ads or DV360). In contrast, other operators must go through a double cookie matching process – one with the provider of the server-side bidding solution (Google) and one with the buyer – leading to significant inefficiencies. As a result, loss rates to non-Google bidders increase.

Audience arbitrage

In addition to the concerns outlined above, Google has the ability to use data from publisher websites to its own advantage in 'audience arbitrage'. This involves an ad tech vendor 'usurping' the audience of a publisher and targeting it across the web for its own benefit, and is discussed above in **section 5.2(c) of Part A.** [REDACTED]

¹⁴⁴ [REDACTED]

[REDACTED]

For example, assume Google knows which Internet users are subscribers of *The Australian* (it may do so through the DoubleClick cookies it places on *The Australian* properties). This is a premium audience, for which many advertisers are willing to pay. Google is able to follow this premium audience across the web i.e. when members of the audience visit other websites (e.g. a small-readership blog). Google can buy inventory on such websites for very small amounts but still charge advertisers a premium for reaching a high-valued audience, extracting the margin. Alternatively, Google can simply offer advertisers the ability to target such users on its own properties (e.g. SERP and YouTube), in which case Google receives 100% of the ad spend.

If it occurs, this practice of 'audience arbitrage' would be particularly harmful as it commoditises recognised publishers and feeds other publishers, thereby breaking the link between the recognised publisher and one of its most valuable assets: its audience. As a result, ad revenue would be diverted away from the recognised publisher to the benefit of Google.

¹⁴⁵ [REDACTED] Stephen Adshead, Grant Forsyth, Sam Wood and Laura Wilkinson, *Online advertising in the UK*, Plum Consulting, January 2019, <<https://plumconsulting.co.uk/online-advertising-in-the-uk/>>, page 60.

¹⁴⁶ As part of its service, Google Ad Manager collects certain user data from publisher properties, including: the page URL, the user ID (through the DoubleClick cookie), browser/device information), and IP address.

Availability of information and pricing transparency

Opacity in the ad tech supply chain

- 17. For publishers:**
 - (a) What information do you need to make informed decisions about how to sell your display advertising inventory?**
 - (b) Do you have access to this information? If not, how does this impact your decision-making about how to sell your display advertising inventory?**
 - (c) Who controls access to this information?**

Fundamentally, publishers should be provided access to the same data which is provided by Google to buyers. The fact that the 'buy side' has access to more data than the 'sell side' creates a significant imbalance – an information asymmetry – in the ad tech supply chain, and means that publishers find it difficult to create a picture which best helps them to sell their display advertising inventory. Having access to the same data as the buyers would, for example, enable publishers like News Corp Australia to create pricing rules regarding viewability.

Bidding data

News Corp Australia needs information about the auction bids made on advertising inventory on its websites in order to best optimise its advertising inventory.

Google controls access to the vast majority of data about bidding on publishers' – including News Corp Australia's – advertising inventory. This has created a relationship of dependency on Google's ad tech services, and has also left publishers at the whim of Google's decisions about data derived from publisher's inventory.

Specifically, News Corp Australia requires bidding data and impression-level data to be able to make informed decisions about how to sell its display advertising inventory. As outlined at **page 74 above**, this information was previously made available to News Corp Australia in the form of two separate data sets from Google Ad Manager which it must reconcile:

- bid data transfer files that include Google's bidding data; and
- an impression data transfer file that includes the impression-level data about publishers' pages and their users (i.e. information on an impression-by-impression basis, including the bids of header bidding demand partners).

Access to this information enabled publishers to explore and compare monetisation options, including opportunities to sell advertising inventory through different channels, including directly to advertisers.

As outlined at **page 74 above**, Google has enacted changes to the effect that publishers are no longer able to reconcile these datasets, making it significantly more difficult for publishers to optimise their advertising inventory based on data from past auctions. This impairs News Corp Australia's ability to make informed decisions about how to sell its display advertising inventory.

Having access to log-level data, including impression-level and bid-level data, uninhibited by restraints imposed by Google would further improve News Corp Australia's ability to make informed decisions

about how to sell its display advertising inventory. Log-level data should also be provided for inventory sold via the YouTube platform.

Log-level data is data on each auction organised by an ad exchange (i.e. AdX), including the bids submitted by each participant. While the data is provided in the new bid data transfer file, its value is substantially diminished as it cannot be tied to winning header bidding bids from the impression data transfer file. Obtaining this data and being able to properly use it would enable News Corp Australia to review every auction individually, rather than collectively, and thus run its own analysis with a full view of bidding data.

Further, News Corp Australia needs full transparency into advertisers' bidding data, including Google Ads advertisers, to be able to understand who buys their inventory and to make informed decisions about how to sell that inventory in the future.

User data

News Corp Australia does not have access to all the information about its audiences that is made available to the buy side free of charge. This places News Corp Australia at a competitive disadvantage vis-à-vis advertisers that might otherwise advertise directly with us. This asymmetry in access to data has also entrenched publishers' dependency on Google for advertising revenue.

In other words, because Google controls data that publishers do not have access to, it has cemented its position as an unavoidable intermediary between publishers and advertisers. A good example is first-party user data. Google (and also Facebook) have vastly greater access to first-party user data since many users are logged into their Google accounts when they browse the internet, or use those accounts for verification purposes on third-party sites. Meanwhile, only a small percentage of users 'log in' to publishers' platforms directly. Google's and Facebook's first-party data is – due to its scale – attractive to advertisers with the effect that publishers cannot compete against the vast first-party data held in Google and Facebook's walled gardens.

Publishers should have access to anonymised user IDs that are interoperable across the ad tech supply chain. As outlined at **page 81 above**, Google has 'hashed' user IDs, meaning that ad tech services providers must attempt to match these 'hashed' user IDs.

Another reason for the disparity in data collection between publishers and the digital platforms is the latter's use of restrictive publication formats, including Google's AMP and Facebook's Instant Articles. These formats present publishers' content within the Google and Facebook ecosystems, respectively. This means that Google and Facebook collect first-party data about their users: data which would have been first-party for the publisher had the user been on the publisher's website instead. Instead, publishers are unable to collect data about users accessing content through these channels. This increases the dependency of publishers on Google and Facebook for commercially important information about their own products. Additionally, since AMP and Instant Articles are closed environments, publishers are not able to use their existing audience data infrastructure to identify the device being used and serve targeted ads to them.

Pricing transparency

- 19. For publishers:**
- (a) Are you able to easily determine the price at which your inventory is sold and the difference between the sale price of your ad inventory and the revenue you receive?**
 - (b) Can you easily compare the price and quality of services being offered by supply-side ad tech services providers? If not, what is preventing you from being able to make this comparison?**
 - (c) How does the availability of pricing information affect your ability to maximise the profit generated from your ad inventory?**

News Corp Australia can determine the price at which its inventory is sold (i.e. the revenue it obtains from its inventory) by extracting the CPM and number of impressions from DFP, within Google Ad Manager. However, News Corp Australia is not able to determine the difference between the sale price of its ad inventory and the revenue it receives. Once News Corp Australia sells its inventory in an ad exchange, it does not know the price at which the inventory is sold to advertisers. As the UK's Competition and Markets Authority identified in the Interim Report of its market study into Online platforms and digital advertising:¹⁴⁷

"Market participants typically do not have visibility of the fees charged along the entire supply chain and are concerned that this limits their ability to make optimal choices on how to buy or to sell inventory, reducing competition among intermediaries."

The availability of pricing information significantly affects News Corp Australia's ability to maximise the profit generated from its ad inventory. The opacity of the ad tech industry continues to make it difficult for publishers to maximise the profit it is able to generate from its ad inventory.

¹⁴⁷ Competition and Markets Authority, Online platforms and digital advertising: Market study interim report, 18 December 2019, <https://assets.publishing.service.gov.uk/media/5dfa0580ed915d0933009761/Interim_report.pdf>.

Auction and bidding processes

25. Are there any features or aspects of current auction or bidding processes that you consider may have the potential to preference any particular supplier of ad tech services? If so, please provide examples.

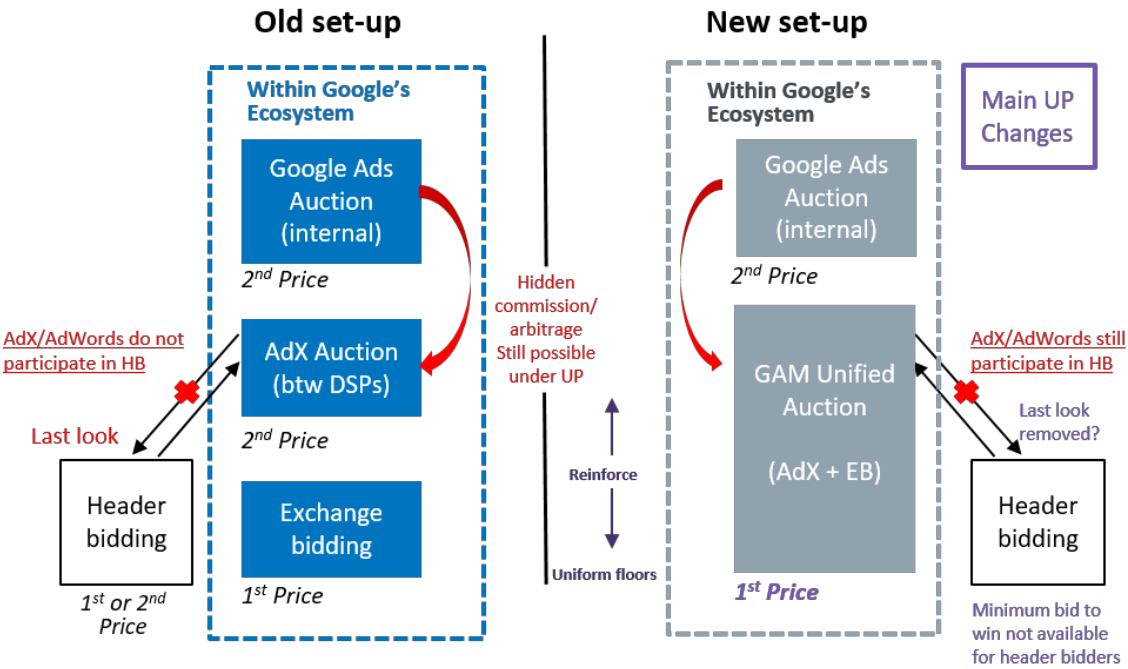
Current auction and bidding processes

Ad tech auction and bidding processes have evolved over the past decade from the waterfall system, to Dynamic Allocation and Enhanced Dynamic Allocation, header bidding processes, and Google's introduction of Exchange Bidding (which has been renamed 'Open Bidding' but we continue to use the term 'Exchange Bidding' in this submission). A detailed summary of the changes programmatic advertising auction processes can be found in **section 5.1 of Part A** starting on **page 20**.

Since the ACCC's Digital Platforms Inquiry Final Report, there has been another significant change to the auction process with Google's introduction of the unified auction.

In March 2019, Google announced that it was moving to a single unified first-price auction by the end of that year. Under this new system, a unified auction is conducted by Google Ad Manager (which now contains Google's ad exchange, AdX). A comparison of the old and new arrangements is shown in **Figure 38 below**.

Figure 38: Auctions overview pre- and post-unified auctions



The move to unified auctions has four key aspects.

First, the **unification of the auction**. The announcement by Google in March 2019 claimed that the AdX auction would collapse into Exchange Bidding so that there would be only one, first-price, auction run by Google (the first-price aspect is discussed below). The demand sources competing in a single auction run by Google were to be:

- guaranteed campaigns (i.e. publishers' direct deals),

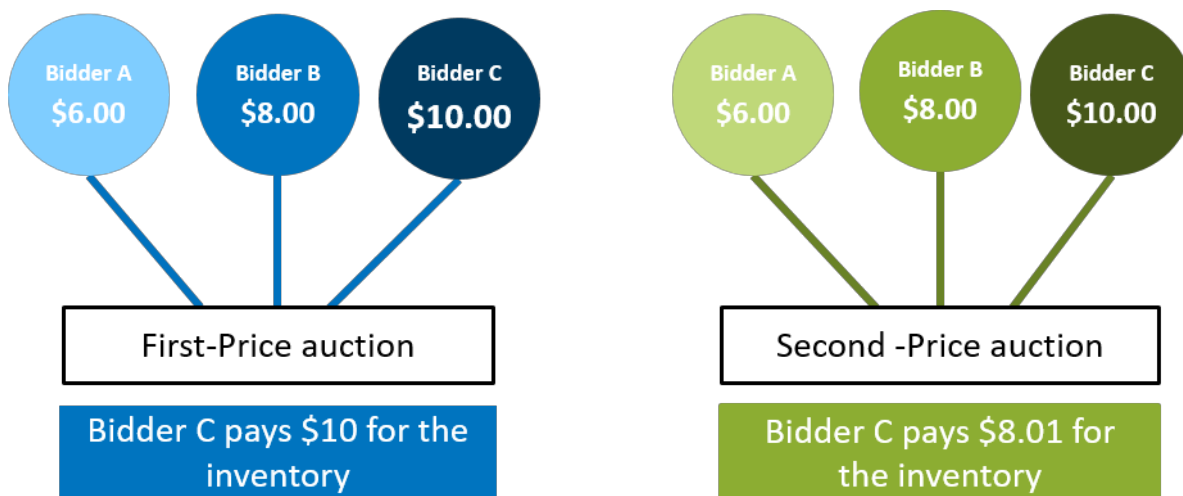
- non-guaranteed advertising sources (which may be further divided between third-party exchanges participating in Exchange Bidding and DSPs connecting to AdX), and
- non-guaranteed line items (which are used to insert header bidding bids).

There appears to be an assumption in the media releases relating to the change to a unified auction that publishers have enabled Exchange Bidding. While it appears the unified auction functions will function even if Exchange Bidding is not enabled, there is no certainty that opting not to utilise Google's Exchange Bidding will remain an option for publishers in the future: see below at **page 91**. It is also likely that Google retains a 'last look' type of advantage, regardless of whether it is formally characterised as such. This is explained further at **page 51 above**, and below in response to **question 26**.

Second, the introduction of **Unified Pricing Rules (UPR)**. These rules enforce a unified price floor – to be applied to all bidders – and limit the number of rules a publisher can use when selling inventory.¹⁴⁸ Previously, publishers could set up to 5000 rules.¹⁴⁹ Now, the limit is 200.

Third, the **first-price nature of the auction**. Much of the commentary has focused on this element of the unified auction. There has been a general shift in the industry by most non-Google ad exchanges from second-price to first-price auctions. Whereas second-price auctions allowed winning bidders to pay only one cent more than the runner-up bid, in a first-price auction the winner must pay what it has actually bid. Google was the last major platform to transition to first-price auctions.

Figure 39: The difference between first- and second-price auctions



Finally, **changes to the bid data transfer file**. Due to Google limiting the data it was providing to publishers, publishers were accessing separate data transfer files and reconciling them. This was done in order to combine both bidding data from Google's ad exchange, AdX, with impression-level data from Google's publisher ad server, DFP (now rebranded as a module within Google Ad Manager). As discussed above in response to **questions 13 to 16**, this connection of information is crucial for yield optimisation. Under the new set-up, and under the guise of a privacy argument, Google is making it impossible for publishers to combine that data.

¹⁴⁸ Lucie Laurendon, Google unified first auction explained, as at 11 May 2020, <<https://smartadserver.com/articles/google-unified-first-price-auction-explained/>>.

¹⁴⁹ Lucie Laurendon, Google unified first auction explained, as at 11 May 2020, <<https://smartadserver.com/articles/google-unified-first-price-auction-explained/>>.

How these processes preference Google as a supplier of ad tech services

These changes feed into the features of current auction processes that have the potential to preference Google as a supplier of ad tech services and a participant in ad tech auctions.

(a) Unified Floor Price

News Corp Australia is concerned that unified pricing will result in a further shift of control in the auctioning process from publishers to Google.¹⁵⁰ This is in part because of the inability of publishers to set different price rules for different categories of buyers through Google's platforms), the inability to withhold publisher inventory from Google's exchange (with Exchange Bidding), and the information advantage that Google's publisher ad server shares with those bidding through Google (Exchange Bidding or Google's ad exchange).

Under the previous set-up, publishers could set granular price floors for their inventory; adjusting the floor for different buyers to account for different advertisers' willingness to pay and any information asymmetries. Under the unified auction, Google is introducing its Unified Pricing Rules (**UPR**). These rules enforce a unified price floor – to be applied to all bidders. It also limits the number of rules a publisher can use when selling inventory to 200, which is significant because publishers could previously set up to 5000 rules.¹⁵¹ (Initially, Google imposed a limit of 100 rules, but increased the cap to 200 following industry backlash.) Google justifies these changes with the argument that in a first price auction, price floors are not important. However, News Corp Australia does not believe this is the case.

News Corp Australia does not believe that uniform pricing is for the benefit of publishers or others in the supply chain – including advertisers. As **Figure 26 above** highlights, it will potentially result in revenue losses for publishers and higher price floors for certain advertisers. Rather, News Corp Australia believes that the UPR work to shift primary control of the auction processes to Google, enable Google to bid with a lower price floor, and prevent third-party ad exchanges from operating outside the control of Google.

It is particularly problematic in the context of bid shading. While the structure of first-price auctions theoretically smooth out the power dynamic between advertisers and publishers, the move to first-price across the industry has resulted in DSPs across the board trying to regain some of their previous power through the use of an algorithmic tool, called 'bid-shading'. Google offers such a feature through DV360 (for free).

With bid shading, DSPs analyse historical information logged about bids with the aim of advertisers paying as little as possible without impacting their win rate. Publishers do not have access to this same data or the algorithms used to analyse it. This has a direct impact on the competitiveness of these auctions. Rival bidders have an information disadvantage, which can permit Google's DV360 and Google Ads to disproportionately win ad auctions. In order to try to make up for this lack of competition, given this conduct, publishers set different price floors for bidders based on those bidders' strength. Whereas Google's price floor may have been set at \$1.50, Xandr's might be set at \$0.80, as depicted in **Figure 27 above**. This is because it is economically optimal to, when faced with asymmetric bidders in an auction,

¹⁵⁰ See Stephanie Layser, Are Unified Pricing Changes Good for Publishers or Good For Google, Ad Exchanger, 12 July 2019, <<https://www.adexchanger.com/the-sell-side/are-unified-pricing-changes-good-for-publishers-or-good-for-google/>>.

¹⁵¹ Lucie Lauredon, Google unified first auction explained, as at 11 May 2020, <<https://smartadserver.com/articles/google-unified-first-price-auction-explained/>>.

set a higher price floor for stronger bidders and a lower floor for weaker bidders. This incentivised stronger bidders to engage in less bid shading, and preserves revenue for the publisher. Google is evidently one of those stronger bidders with superior data, which Google provides to its advertisers through features like minimum bid to win, and DV360's optimised fixed CPM.¹⁵² Now, under Google's Unified Pricing Rules, the inability to set price floors will further consolidate the auction process into Google's hands. Publishers will not be able to run optimal and competitive auctions, while Google will be able to take advantage of tactics such as bid shading, paying less for inventory.¹⁵³ It is also unlikely advertisers will profit from a drop in the price at which publisher inventory is bought, with Google able (and likely) to keep the surplus. Further detail on Google's pricing arbitrage is set out in **section 5.1 at page 33 above**.

Importantly, the efficacy of bid shading on any one DSP is determined by that DSP's machine learning expertise and access to data. If a DSP has the ability to scan and incorporate as much data as possible across the entirety of the web, and the machine learning power to properly analyse that data, a first-price auction can function like a second-price auction. Google is the only company with this reach and capability. Advertisers ingesting the minimum bid to win data provided by Google (and withheld from those not using Google's advertiser ad server) will have a comprehensive view of the bid landscape of other impressions they are willing to buy. This nullifies much of the publisher advantage ostensibly gained from a move to first-price auctions, as advertisers within the Google ecosystem will be able to approach the bidding process largely like a second-price auction. The implications of bid shading occurring in Google's auctions, where the Unified Pricing Rules restrict publisher pricing flexibility, is examined further below in this section.

(b) Bid and sales data

Google suggested that under its Unified Pricing Rules, publishers would have better visibility as to who is bidding. Google said it would provide data – such as the range of bids received, across specific ad units and also different buyers – from all bids via bid data transfer files. Yet in News Corp Australia's experience, this is far from the case.

As outlined above, due to the new bid data transfer file, publishers are not able to link bidding data relating directly to publisher inventory from the AdX and Exchange Bidding side to the impression-level data on the DFP side. This development is discussed further under **question 36**. The evidence suggests that it has further increased opacity and undermined the competitive restraint exercised by client-side header bidding. Numerous features of Google's new auction processes in essence recreate Google's previous advantage, strongly self-preferencing itself as a supplier of ad tech services to the detriment of publishers, advertisers, competitors, and consumers.

In News Corp Australia's view, the key consequences of this change are:

- Publishers are left to deal with two irreconcilable files, while Google continues to have visibility over all losing bids and therefore the ability to optimise its bidding strategy (including the purchase of inventory at cheaper prices).

[REDACTED]

- Publishers are not able to compare the performance of non-Google providers and Google's platform; necessary for real competition to thrive in this space. Rival ad tech providers will find it increasingly difficult to demonstrate how they add value for publishers.
- It will be impossible to ascertain whether Google is, for example, allowing its own ad exchange to bid a microsecond after others, since the timestamp corresponding to each bid will be truncated to the hour.
- The new bid data transfer files prevent publishers from measuring the incremental value of their own first-party data. If a reader goes to a News Corp Australia website and is reading sports content, News Corp Australia may send impressions to Google's publisher ad server, DFP to fill, along with information about the content (e.g. sports). This allows the publisher to understand how bids change based on the addition of this first-party user data. By removing publishers' ability to use this information, Google removes publishers' incentives to invest in their own data segments – which News Corp Australia has done through its News IQ division. It leaves publishers ever more dependent on Google.

(c) Minimum bid to win

Another data-related feature of Google's current auction processes that acts to self-preference its own ad tech services is how Google's advertiser ad server provides only the buyers integrated through Exchange Bidding or Google's ad exchange feedback on auction results. These buyers can use this information to adjust their bidding strategies and possibly purchase the same inventory for a cheaper price. Those publishers utilising client-side header bidding, and hence unable to access this data, are significantly disadvantaged. In turn, once pulled inside Google's channels, rational buyers would then shift their spend towards Google's ad exchange instead of another exchange, because of the tied, cross-subsidised and self-preferential nature in which Google has structured its ad tech supply chain.¹⁵⁴ This effect is amplified under Google's shift to first-price auctions. Advertisers that have access to the minimum bid to win will have a comprehensive view of the bid landscape of the impressions in which they are interested. This nullifies the publisher advantage ostensibly gained from a move to first-price auctions, as advertisers within the Google ecosystem will be able to approach the bidding process largely like a second-price auction.

It is important to note that publishers cannot disable the provision to bidders of minimum bid to win details about their inventory. This is a distinct information advantage that Google's ad server reserves for advertisers buying through Google auctions: Google's ad exchange or Exchange Bidding.

[REDACTED]

¹⁵⁴ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 33.

(d) Predatory pricing

Google offers its publisher ad server, DFP, free to publishers with fewer than 90 million monthly impressions. The sacrificed profits can easily be made up by Google's upstream products, especially since Google has vertically integrated across the entire supply chain. This means that drawing publishers in at one level of the supply chain strongly incentivises them to remain with Google for all of their ad tech uses. Meanwhile, the offering discourages competition and is a barrier to the entry of competitor ad servers (addressed further in **questions 30 and 31 below**). [REDACTED]

This leaves open the potential for Google to, once it captures sufficient market power across the stack, start extracting greater amounts of data from its users under less beneficial terms, and engaging in greater levels of rent extraction in ad intermediation.¹⁵⁵

(e) Exclusion of competing DSPs and ad exchanges

As explained above, a healthy ad tech market would have frictionless multi-homing between DSPs and ad exchanges. In contrast, Google uses its DSP (DV360) and its advertiser ad server (Google Ads) to maintain its market power in ad exchanges. Google Ads and DV360 disproportionately send demand to Google's ad exchange.

Rival buy-side technologies are excluded from accessing YouTube and Google Search inventory. In theory, advertisers can multi-home, but the costs and inefficiencies associated with multi-homing leads many advertisers to default to Google's integrated service.

Similarly, rival ad exchanges are excluded from advertisers using Google Ads. An increase in the capacity of third-party ad exchanges, preferably with access to Google Ads demand, would enable advertisers to reach more consumers, but this is disregarded in favour of Google maintaining ecosystem control.

(f) Tying of AdX and DFP

Many of the problems above are linked to the tying of Google's ad exchange, AdX, and Google's publisher ad exchange, DFP, under Google Ad Manager. There are two additional elements of this rebranding that are worth noting: the assumption that the publisher has enabled Exchange Bidding, and the increased capacity for Google to engage in self-preferencing behaviour without detection.

First, the announcements of Google as to how unified auctions will work are silent on scenarios where the publisher has not enabled Exchange Bidding (which is currently optional). While there has been no indication that Google intends at present to make Exchange Bidding a mandatory element, Geradin and Katsifis have observed that it may be possible for Google to move to use contractual restrictions to ensure that publishers enable Exchange Bidding in addition to header bidding.¹⁵⁶

¹⁵⁵ Jörg Hoffmann and Germán Johannsen, EU-Merger Control & Big Data: On Data-specific Theories of Harm and Remedies in Marco Botta and Josef Drexler (eds), EU Competition Law Remedies in Data Economy, Springer, forthcoming, page 21.

¹⁵⁶ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 33 citing Sarah Sluis, Publishers Lash Out Against Google Over 'Unified Pricing' Changes, 18 April 2019, Ad Exchanger, <<https://adexchanger.com/online-advertising/publishers-lash-out-against-google-over-unified-pricing-changes/>>.

"...one worried publisher noted that some Google contracts require 'fair access' to inventory, which means that an exchange that competes via header bidding must also be slotted into exchange bidding."

Secondly, before being brought together under Google Ad Manager, when Google's publisher ad server (DFP) and ad exchange (AdX) were separated, DFP sheltered AdX from real time competition. While this occurred under second-price auctions, it is highly likely that such practices will continue and indeed intensify under the combined entity Google Ad Manager even with first-price auctions. Google has a strong incentive and requisite capacity to allow its own exchange to bid a microsecond after others, in a form of 'last look', with full knowledge of the bids submitted. Such conduct would not be apparent to advertisers or publishers: although bids were previously shown by the microsecond, as part of the recent changes in the new bid data transfer files they are now being shown by the hour. Alternatively, Google may feed the bidding data of its rivals to a bidding algorithm and predict the exact bid it needs to submit to win by a cent, even in real time and with no formal 'last look' advantage.

The conduct explained above is possible because of the role of network effects and the benefit to Google in re-enforcing them through tying, particular on the buy-side of the ad tech stack. This was explained in detail in **Part B** above in response to **question 2** [REDACTED]

26. Do you consider auctions and bidding processes to be run fairly for all market participants?

News Corp Australia does not consider that ad tech auctions and bidding processes are run fairly by Google for all market participants. The unfair nature of the resulting market is well-described by Gavin Dunaway, editorial director of advertising news blog 'Ad Monster'. In relation to the 2018 tying of DFP and AdX under Google Ad Manager, Dunaway stated:¹⁵⁷

"The name change re-emphasizes that Google will leverage its near-monopolistic control of the publisher ad server market to shoo away other demand sources—whether or not that's good for the publisher or the advertiser."

News Corp Australia sees this unfairness manifest in four primary ways.

First, Google is not a neutral auctioneer. The auction is run by and participated in by Google, leaving Google with ample opportunity to favour its own ad exchange. For example, in News Corp Australia's view it is unlikely that the practical effect of Google's 'last look' advantage is gone. See the analysis at **page 51 above**. News Corp Australia considers that it may be possible for Google to allow its own exchange to make its bid a microsecond after its rivals. This will not be apparent to advertisers or publishers, as bids are shown by the hour in the new bid data transfer file. News Corp Australia considers that it is also possible that Google may also pass on less information to its rivals, hindering competitors' ability to identify users and bid on impressions. This would not be unprecedented. In the US, Google has used the California Consumer Privacy Act (**CCPA**) as justification not to send out bid requests from non-Google bidders. In contrast, rivals are still sending out equivalent bid requests.

¹⁵⁷ Gavin Dunaway, Death of DoubleClick, Birth of a Monster?, AdMonsters, 3 July 2018, <<https://www.admonsters.com/death-doubleclick-google-ad-manager/>>.

A **second** and related problem is that Google has unique levels of access to commercially sensitive data: the bidding data of its rivals. It is possible for Google to use this data in an algorithm to predict how each participant will bid for each impression. Even if Google does not share data from its various streams, this is increasingly difficult to ascertain in light of the tying of DFP and AdX services under Google Ad Manager. With this integration, Google has abandoned separation of products in its ad tech stack. One way in which Google is potentially using its vast data to unfairly self-preference its products is through its minimum bid to win feature, discussed earlier.

These first two elements together mean Google is able to run 'black box' auctions where it can self-preference without any rivals or users being aware of it doing so.

The **third** issue, which has been mentioned a few times above, is that the 'last look' advantage has not necessarily been removed under unified auctions.

It is important to first clarify the nature of the 'last look' advantage. It is really just a name for a consequence of Dynamic Allocation that allowed Google to outbid. As explained by Geradin and Katsifis,¹⁵⁸ under Dynamic Allocation, DFP would scan all eligible non-guaranteed line items and select one with the CPM, and send a bid request to AdX with that highest CPM as its price floor. If AdX could then bid just one cent more, it would win the impression. The other exchanges would not be called. The outcome is actually similar in header bidding: participating exchanges submit their bids in an auction run before DFP is called to select an ad, and once called, DFP applies Dynamic Allocation. Again, it selects the non-guaranteed line item with the highest prices (corresponding to the winning bid from the header bidding auction), and passes it on to AdX. If AdX can bid one cent more, it wins. So, it is News Corp Australia's conclusion that Google's 'last look' was not linked to whether an auction is first- or second-price. It was linked to Dynamic Allocation, which remains a key feature of Google Ad Manager. As a result, News Corp Australia shares the scepticism of Geradin and Katsifis whether unified auctions remove Google's 'last look': see the analysis at **page 51**.

There is also a possibility that Google will continue to share prices for 'non-guaranteed' line items (which are used for header bidding), giving it an ongoing advantage over header bidding.

Even if Google lost some of its previous, formal 'last look' advantage, it is highly equipped to engage in bid shading, more so than its rivals. Due to its large data set and machine learning expertise, Google can predict the minimum bid required to win an auction with precision. If Google provides this information to advertisers within its ecosystem, Google enables these advertisers to utilise bidding tactics in a first-price auction which closely resemble a second-price auction. In News Corp Australia's view, Google has created an auction process more unfair than an ordinary second-price set up. Under its new model, the successful buyer and winning bid are determined by who has access to the most information and machine learning technology. The winner is almost always going to be Google.

Fourth, the unfair running of auction processes is shown through the scope for rent extraction. As a result of the weakened competition across the ad tech supply chain, Google is in theory able to extract monopolistic rents in ad intermediation by securing additional undisclosed margins in addition to its

¹⁵⁸ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 28.

disclosed commissions. This would be through Google's potentially being able to "solicit higher bids from advertisers compared to other DSPs, allowing Google to keep the difference instead of passing it on to the publisher," the details of which are explored by Geradin and Katsifis in a peer-reviewed 2019 paper.¹⁵⁹

Under the unified auction, this scope for rent extraction remains.

This is best explained through an example: if Google Ads runs its internal second-price auction, the winner is charged \$X CPM. Google can simply make a lower bid of \$X-1 in the unified auction that it knows is still sufficient to win, pocketing the difference without either the advertiser or publisher knowing. Indeed, the UPR may even increase the margin available to Google Ads, as publishers may need to lower the previously-heightened price floor used for Google, allowing it to succeed with lower bids than previously.

27. How does the ad tech supply chain differ (if at all) for display ads served on desktop browsers, mobile browsers, and mobile apps?

Google's integrated ad tech services operate along the entire supply chain in all mediums, whether desktop browsers, mobile browsers, or mobile apps. The basics of the ad tech supply chain are detailed in **Part A in section 2.4**.

Desktop versus mobile web

At a foundational level, the buying process is very similar on desktop and mobile web. Advertisers choose their audience and their budget, and plans are created to target that audience across their use of desktop and mobile browsers. In both cases, the DSP will bid on a per impression basis, and the ad exchange will offer up the inventory to the highest bidder.

The main difference between the two stems from the different interactions between a user and a server in desktop versus mobile web contexts. On a desktop, the user's browser tends to do the work, picking up data about a user and fetching and redirecting information. That is, the browser contacts a server, and is then redirected to another server(s). Although this process tends to require substantial work from the browser, this is generally not an issue due to high speed landline connections. On a mobile phone reliant on cellular networks, however, connection speeds can pose more of an issue. For many users, their connection will not be fast enough for the desktop method to work: if a mobile browser fetches the ad the same way it does on a desktop, the user is likely to abandon the webpage before the ad finishes loading.

As a result, more work is done in the cloud for mobile ad serving. In the mobile context, the browser tends to call a server which then interacts with other servers through fibre-optic landlines, instead of the cellular network.

¹⁵⁹ See Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, 15(1) European Competition Journal, 2019, page 55; See also Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, pages 10-14.

The AMP standard was also originally incompatible with client-side header bidding, undermining the competitive threat presented by header bidding to Google's offering. The alternative, server-side header bidding, which is the only header-bidding that Google participates in, lacked many of the advantages of client-side, taking place on third-party servers and providing Google an advantage in user ID and user data matching, as outlined under **questions 13-16**. While Google has since developed a solution that enables publishers to implement client-side header bidding for their AMP pages, this solution has significant constraints, as discussed in **section 5.1(d) in Part B above**.

Web versus 'in-app'

The advertising and publishing process changes more dramatically when one compares in-app and web advertising. This distinction is critical because much of the recent growth in programmatic mobile is coming from apps.

The difference between web and in-app largely stems from data. On desktop and mobile web, data tends to be gathered through cookies (although this process is facing significant change: see **question 36**). In-app, user data is gathered through unique device identifiers rather than cookies. These device IDs are a string of numbers and letters identifying every smartphone or tablet globally. They enable gathering of information like the number of times an ad is seen by a user, the user's location, device type, etc. The device ID can be retrieved by an app installed by the user, and is typically retrieved when the app is talking to servers.

Both Apple and Android phones have, since 2012 and 2013 respectively, created new types of device IDs, ostensibly to address privacy concerns. On iOS, the device ID is Apple's Identity for Advertisers (**IDFA**). On Android, the device ID is Android Advertising ID (**AAID**).¹⁶¹

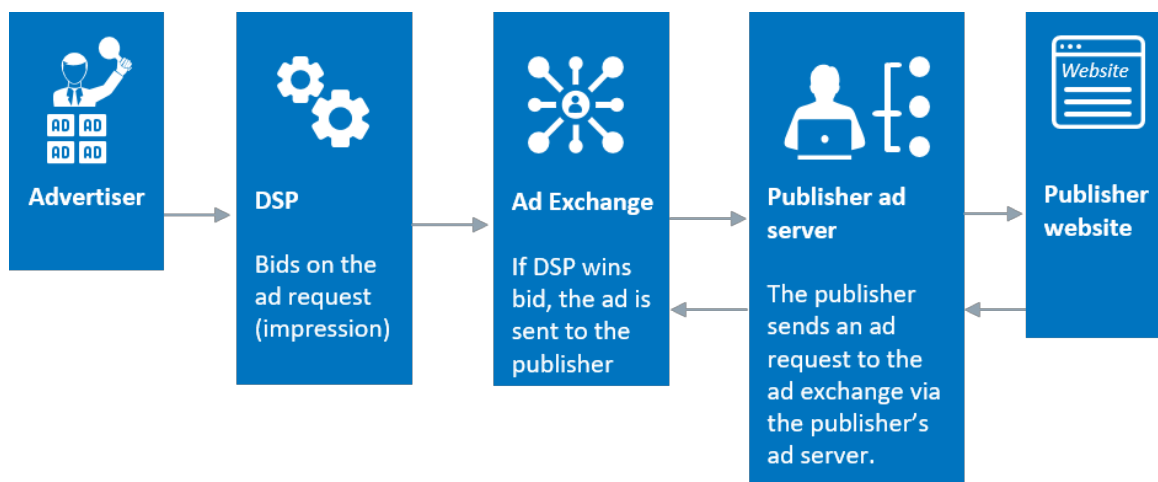
The reliance on device IDs for user data on mobile apps, and the large majority of Android smart devices, means that Google's AAID further shifts the power dynamic to Google's favour in the mobile app ad tech supply chain. It provides scope for Google to only allow use of its AAID subject to certain conditions, which may prevent its rivals in ad tech from enjoying the same business model flexibility that Google has. Restricted use of AAIDs and limited disclosure of information gathered by AAIDs also makes it more challenging for other ad tech players to understand the state of the market.

28. How does the ad tech supply chain differ (if at all) between real-time bidding, programmatic direct, and private marketplace transactions?

Real time bidding (**RTB**) is the most popular way of buying online media programmatically. As explained in **Part A above**, there are many ad tech service providers involved in an RTB transaction, but three play a key role: a DSP, an ad exchange, and a publisher ad server.

¹⁶¹ It was originally known as Google Play Services ID for Android (AdID).

Figure 40: A basic representation of a RTB supply chain

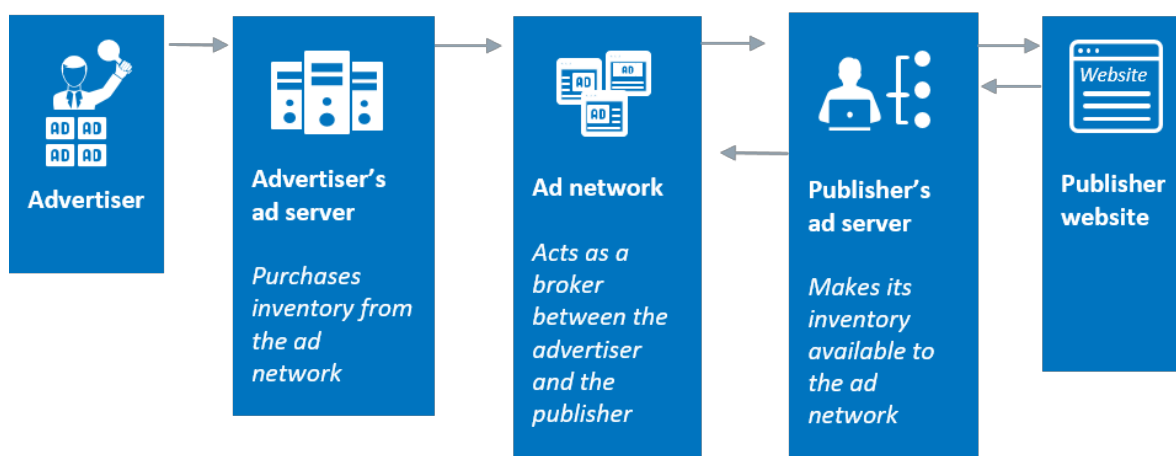


Programmatic Direct (which includes programmatic guaranteed and programmatic non-guaranteed) replicates a more traditional method of bidding in an automated setting. It is a one-to-one media-buying process, and is quite similar to the private marketplace, with the exception that advertisers and publishers agree on specific inventory based on a fixed CPM. The process generally follows the following steps:

- An advertiser browses through a shop-like catalogue of websites, choosing placements and configuring flight dates and volume of impressions.
- The advertiser then places an order on the platform.
- The publisher audits and verifies the campaign, and the order is executed.

Programmatic Direct is an exception to Google's unified first-price auctions. Programmatic Direct will not be part of the first price competition.

Figure 41: A basic representation of a Programmatic Direct supply chain



Private Marketplaces (PMPs) are essentially invite-only variations of the RTB model. PMPs give publishers better control over their ad inventory, and guarantee higher CPM. They also provide more transparency in the publisher-advertiser relationship. All parties are more aware of what they are buying and who they are targeting, which is not possible in open marketplaces, particularly with the restricted

access to data and opacity in Google's offerings. Pricing in a PMP can occur through an auction or using 'Deal ID' terms. Deal IDs are unique identifiers generated by the publisher's ad server. They enable advertisers to identify publishers in the auction and buy premium inventories based on certain pre-negotiated terms. Advertisers can choose to engage with the Deal ID, or to skip it in order to compete for the impressions in an open auction instead.

For the purposes of this submission, News Corp Australia is most concerned with open auctions. Open auctions have an indirect sales path, relying on intermediaries providing the ad exchange service, like Google. This differentiates open auctions from PMP and Programmatic Direct, where a direct advertiser-publisher relationship remains. Further, open auctions utilise RTB, unlike Programmatic Direct. It is in the context of open auctions that Google's conduct has the most impact.

The differences between open auctions, private marketplaces, and programmatic direct are summarised in

Table 2 below.

Table 2: The ad tech supply chain with RTB, PMP and Programmatic Direct

Media execution type	Programmatic		
	Real Time Bidding		Programmatic Direct
	Open Auction	Private Marketplace	
Price	Auction	Auction and/or Deal ID terms	Pre-defined
Direct Advertiser – Publisher relationship	No	Yes	Yes
Inventory volume	Non-guaranteed	Non-guaranteed	Guaranteed
Delivery	DSP / Over RTB pipes	DSP / Over RTB pipes with a Deal ID set	Programmatic direct platform integrated with the publisher's ad server

Mergers and acquisitions

- 30. Have any mergers or acquisitions provided suppliers with the ability to profitably raise prices or lower quality without losing customers, or made it more difficult for new companies to enter the market? If so, which ones?**
- 31. Has competition, or potential competition, in the supply of ad tech services been impacted by:**
- (a) acquisitions of start-up companies**
 - (b) acquisitions of new technology**
 - (c) mergers or acquisitions between companies at different levels of the ad tech supply chain?**
- If so, please describe how.**

It is useful to answer **questions 30 and 31** together, as the mergers and acquisitions which have made it possible for Google to lower quality and increase its profits have also been those which have impacted competition, including by making it more difficult for new companies to enter the market.

Google's mergers and acquisitions

Google's ad tech conglomerate has been built through successive acquisitions, internal restructuring, and merging of businesses. The rise of programmatic advertising in the late 2000s, which came about through the innovation of Google's competitors, threatened Google's position as a market leader in ad tech services. Google's response was to spend over USD 1 billion acquiring a series of small companies (including InviteMedia and AdMeld) to defend its dominant position.

Since the early 2000s, Google has acquired over 200 companies. This is unsurprising. In News Corp Australia's view, Google's strategy has been to engage in a series of acquisitions to maintain and strengthen its market power, and to allow it to execute exclusionary practices to foreclose competitors.

As has been mentioned above, AdSense is the largest contextual advertising network globally. More than two million publishers use it. Google Analytics is more than ten times more widely used in Australia than its closest rival.¹⁶² Google's ad exchange, AdX dominates the Australian market with a 55.15% share of the market (especially notable compared to its next best competitor, AppNexus, which has 14.33%).¹⁶³ Google's publisher ad server, DFP, with which AdX is tied in the recent rebrand under Google Ad Manager, was also dominant in the market for publisher ad servers.

(a) 2007 – Acquisition of DoubleClick's leading ad server tools, DoubleClick for Publishers (DFP) and DoubleClick for Advertisers (DFA)

The ACCC chose not to oppose the transaction because it did not consider the two companies to be close competitors in ad-serving.¹⁶⁴ The acquisition was similarly approved around the world. In

¹⁶² According to data available on Datanyze, Google Analytics and other associated Google web analytics software hold approximately 78% market share in Australia, as opposed to the second largest provider, Facebook Analytics, which has approximately 5% market share. The global statistics show a similar disparity. See Datanyze, Market Share Category: Web Analytics, as at 14 May 2020, <<https://www.datanyze.com/market-share/web-analytics--1/Australia>>.

¹⁶³ Datanyze, Ad Exchanges, as at 13 May 2020, <<https://www.datanyze.com/market-share/ad-exchanges--399/Australia>>.

¹⁶⁴ ACCC, ACCC not to intervene in Google's acquisition of DoubleClick, ACCC Media Releases, 30 October 2017, <<https://www.accc.gov.au/media-release/accc-not-to-intervene-in-googles-acquisition-of-doubleclick>>.

approving the acquisition, the US Federal Trade Commission (**FTC**) partially relied on the representation that Google would not combine the data between DoubleClick's ad server tools and Google's other offerings, both in the ad tech supply chain and outside of it. An additional argument was made to the FTC that even if this data was combined, that data would not confer market power upon Google. However, Google changed its privacy policy in 2016 to allow for internal sharing of its data, and this has significantly increased Google's power in the ad tech supply chain.

The internal sharing of Google's data provides an enormous advantage to its ad tech services. Google's privacy policy applies to all of its products and services, extending even to Android operated Sony TVs.

The benefits of this combined data are highlighted by Google's actions after the change in its privacy policy. A few months afterwards, in September 2016, Google leveraged its data to begin cross-device remarketing on its DSP. Previously, consumer activity was tracked on individual devices through cookies (on computers) and APIs linked to consumer IDs (on mobile devices). These datasets were separate. Now, Google combines that data. This enables Google to see which signed-in user saw an ad on one device, and then purchase the advertised product on another device.

The market for online display advertising has become less competitive since this acquisition.

A blog post by Chris Shuptrine, VP of Marketing at Adzerk, described the outcome of Google's conduct(enabled by acquisitions such as this) as follows:¹⁶⁵

"Google thus destroyed what was once (in the early 2010s) a diverse and crowded ad tech industry. In fact, in the last few years, their three largest ad server competitors have all shut down or pivoted, with Atlas being bought then closed by Facebook in 2016; AppNexus focusing on programmatic ads, Header Bidding, and ad server capabilities for networks; and now OpenX."

For context, in 2013, OpenX was the second largest ad server after Google. In mid-2019, it shut down its ad server product in order to focus on programmatic and video, in light of the substantially altered competitive landscape of the Google-dominated publisher-side ad server industry. Similarly, Verizon Media's Oath Ad Platform ad server is due to be shut down in 2020.¹⁶⁶

(b) 2009 – Acquisition of AdMob

At the time of the acquisition by Google, AdMob was a small start-up. Its offering was ad serving on mobile platforms: matching mobile apps that offered advertising spaces with advertisers which wanted their advertisements placed in those spaces. The advertiser paid the ad server and the server would pass a share of the payment on to the app developer. At that time, the ad serving industry was highly fluid. While AdMob had over 18 competitors in the US, including Google, the fluidity of the market meant that it was unclear how many market participants were close competitors.

The FTC initially had concerns about the acquisition, having determined that Google and AdMob were the two leading firms in the industry or at least a segment of the industry it labelled 'performance ads'¹⁶⁷

¹⁶⁵ Chris Shuptrine, OpenX Ad Server Alternatives, Adzerk, 19 December 2018, <<https://adzerk.com/blog/openx-ad-server-alternatives/>>.

¹⁶⁶ Ronan Shields, Verizon Media to Shutter Oath Ad Server, Adweek, 4 March 2019, <<https://www.adweek.com/programmatic/verizon-media-to-shutter-oath-ad-server/>>; Yuyu Chen, Will it Blend? Oath Will Combine Disparate AOL-Yahoo Ad Tech Assets, Digiday, 13 April 2017, <<https://digiday.com/media/will-blend-oath-will-combine-disparate-aol-yahoo-ad-tech-assets/>>.

¹⁶⁷ Federal Trading Commission, Statement of the Commission Concerning Google/AdMob, FTC File No 101-0031, 21 May 2010, <<https://www.ftc.gov/enforcement/cases-proceedings/closing-letters/google-incadmob-inc>>, page 1.

(performance ads charge by the number of click-throughs an ad receives, and AdMob's mobile ads performed a mobile-equivalent of a click-through).

It appears the FTC's concerns were falsely assuaged by the market entry of Apple at that time. Apple acquired Quattro, launched its ad network and revised the licensing terms it offered to developers publishing apps on iPhones. In May 2010, the FTC concluded that Apple's presence as a competitor would "*mitigate the anticompetitive effects of Google's AdMob acquisition*" and voted unanimously to close its Google-AdMob investigation.

As can be seen by an examination of the market now, Apple's ad tech business is not a substantial competitor to Google's. The FTC's initial concern that the acquisition by Google of AdMob would have an anticompetitive effect in News Corp Australia's view has proven to be correct.

(c) 2010 – Acquisition of Invite Media

Invite Media was also a start-up. It operated a high impact DSP that enabled parties to use RTB to buy and optimise their online media.

At the time, the acquisition of Invite Media did not garner very much attention. This is largely because the acquisition fell under official reporting thresholds. There is increasing recognition that even small acquisitions can make a significant impact in the ad tech sphere: the FTC announced a special order in February 2020 requesting additional information from five tech companies regarding acquisitions from 1 January 2010 to 31 December 2019 that did not reach the threshold for FTC review. One of those tech companies is Alphabet (Google's parent company), and one of those acquisitions is that of Invite Media.¹⁶⁸ Further, this acquisition may not even have been as small as it seemed. In a Bloomberg interview days after the FTC special order, the co-founder of Invite Media stated: "*What we did was we collected as much accounts receivable as possible and immediately paid out everything we could so we didn't have enough money on the books to trigger the FTC stuff.*"¹⁶⁹

With Invite Media, Google made it more difficult for new entrants and for its rivals to compete. The low fees charged by Invite Media after the acquisition (possible due to Google's market power throughout the supply chain) generated bottom line pressures for competing DSPs. Invite Media has since changed form: it was rebranded as DoubleClick Bid Manager, and integrated into the DoubleClick Suite. In another rebrand, DoubleClick Bid Manager was renamed to Google Display & Video 360 (**DV360**). DV360 users are able to buy inventory covering nearly 98% of all available ad inventory worldwide and have access to data from Google that users on rival platforms do not have.

(d) 2011 – Acquisition of AdMeld

AdMeld was an advertising optimization platform for publishers. It was placed between Google's publisher ad server DFP and AdSense, DoubleClick's ad exchange, Google Display Network and AdMob.

Google had originally struggled to get mass adoption from the top 500 publishers. Its interests were not (and are not) all aligned with the publishers, and its structure as a closed market directly competed with many of the most important demand buyers (DSPs, ad networks, exchanges etc). With AdMeld, Google

¹⁶⁸ Federal Trade Commission, 'FTC to Examine Past Acquisitions by Large Technology Companies', 11 February 2020, <<https://www.ftc.gov/news-events/press-releases/2020/02/ftc-examine-past-acquisitions-large-technology-companies>>.

¹⁶⁹ Eric Newcomer, Google Takeover Target Trimmed Assets to Avert FTC Review, Bloomberg, 26 February 2020, <<https://www.bloomberg.com/news/articles/2020-02-26/google-takeover-target-trimmed-assets-to-avert-ftc-review>>.

was able to offer an end-to-end solution for both the buy and sell sides of the market, similar to its advertising search system.

While Google claimed that "[t]ogether with AdMeld, we hope to make display advertising simpler, more efficient and more valuable, provide improved support and services, and enable publishers to make more informed decisions across all their ad space",¹⁷⁰ what it achieved was the removal of a competitor in the business of enabling RTB for publishers. AdMeld also carried with it high-quality publisher clients; Google now had access to this inventory.¹⁷¹ The gain in volume this enabled was a stepping-stone to the further amalgamations we have seen recently. Google integrated AdMeld into AdX, which has in turn been tied with DFP under the branding of Google Ad Manager.

Impacts of these mergers and acquisitions

These numerous mergers and acquisitions have resulted in worse outcomes for competitors and users of Google's ad service offering. As noted by France's Autorité de la concurrence in its 2018 *Opinion into Online Advertising*:¹⁷²

"[t]hese acquisitions generally counteract the limited barriers to entry and expansion as they prevent new players from reaching a significant size and being able to compete with the positions of established stakeholders".

Three impacts of these mergers and acquisitions are examined below: decreased competition, increased barriers to entry, and Google's increased data advantage.¹⁷³

(a) Decreased competition in the market

The problems caused by Google's mergers and acquisitions are clearly shown in the number of market exits that have occurred in the years since: see the market exits of Sizmek, OpenX, AppNexus, TellApart, Right Media, Facebook Exchange, LiveRail, Microsoft Ad ECN, Atlas and Oath.

Sizmek was an ad management platform that was one of the older players in the market. It had been operating, under different names and before various mergers and acquisitions, since 1999. It undertook a period of rapid acquisition in the 2010s, with the hope that it could create a full buy-side stack, and then leverage its global scale to provide a viable alternative to Facebook and Google. Sizmek ultimately reached a user base of 20,000 advertisers and 3,600 agencies globally, serving 1.5 trillion ad impressions yearly. Nevertheless, its plan did not succeed and in April 2019, Sizmek filed for bankruptcy. It was in debt to thousands of creditors, including owing \$4.5 million to Google itself. Sizmek sold off various arms of its business, including its ad serving and dynamic creative optimisation assets to Amazon Advertising.

Right Media was founded in 2003, and operated largely in the ad exchange market. It was acquired by Yahoo for around \$680 million in 2007. At the time, the ad exchange was processing a large number of

¹⁷⁰ DoubleClick Publisher Blog, Helping publishers get the most from display advertising with AdMeld, 13 June 2011, <<https://doubleclick-publishers.googleblog.com/2011/06/helping-publishers-get-most-from.html>>.

¹⁷¹ AdExchanger, It's Official – Google Buys AdMeld, Ad Exchanger, 13 June 2011, <<https://www.adexchanger.com/yield-management-tools/official-google-buys-admeld/>>.

¹⁷² Autorité de la concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, available in English at <http://www.autoritedelaconcurrence.fr/user/standard.php?id_rub=684&id_article=3133&lang=en>.

¹⁷³

impressions. In its clearance of the Google/DoubleClick merger, the European Commission noted "*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.*"¹⁷⁴ In 2015, Yahoo closed Right Media's platform to third parties and non-Yahoo websites and merged its advertising services to create Oath. In turn, Oath was sold to Verizon Media. As noted above, Verizon Media recently announced its plan to shut down its Oath Ad Platform ad server in 2020.¹⁷⁵

Figure 42 and **Figure 43** below provide a helpful visual representation of the change in the competitive landscape in the ad tech stack in the past decade.

Figure 42: Competitive landscape in 2008¹⁷⁶

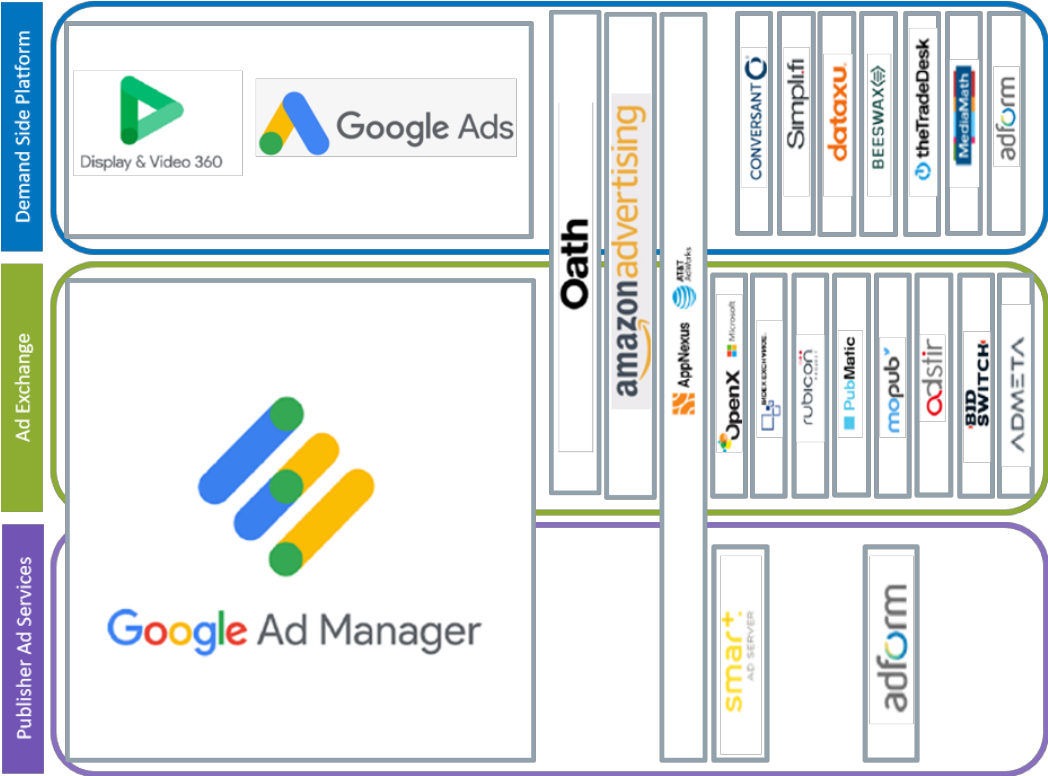


¹⁷⁴ Commission of the European Communities, Commission Decision of 11/03/2008 declaring a concentration to be compatible with the common market and the functioning of the EEA Agreement, Case No COMP/M.4731 – Google/ DoubleClick, <https://ec.europa.eu/competition/mergers/cases/decisions/m4731_20080311_20682_en.pdf>, para 191.

¹⁷⁵ Ronan Shields, 'Verizon Media to Shutter Oath Ad Server', Adweek, 4 March 2019, <<https://www.adweek.com/programmatic/verizon-media-to-shutter-oath-ad-server/>>; Yuyu Chen, Will it Blend? Oath Will Combine Disparate AOL-Yahoo Ad Tech Assets, Digiday, 13 April 2017, <<https://digiday.com/media/will-blend-oath-will-combine-disparate-aol-yahoo-ad-tech-assets/>>.

¹⁷⁶ Companies listed in dashed squares have merged since 2008.

Figure 43: Competitive landscape in 2019 (note that Oath has left the ad server market as of 2020)



(b) Increased barriers to entry

The companies best placed to compete against Google will be existing players in the ad tech supply chain i.e. rivals in publisher ad serving are likelier to succeed when entering the ad exchange market. These companies are best placed to leverage industry knowledge and have existing technical capability. This makes it easier for them to potentially build economies of scope. Previously, OpenX has been used as an example for such a company. However, as we know now, OpenX has left the ad server market. Similarly, Verizon Media recently announced its plan to shut down its Oath Ad Platform ad server in 2020.¹⁷⁷ Google's market power has become so significant such that even the companies with the best chance at competing are finding themselves unable to.

In News Corp Australia's view, Google can also adopt predatory pricing practices, for example by providing free services to smaller publishers. This slashes the revenue of both existing companies looking to enter downstream and start-ups relying on smaller publishers to build their profile, leaving them unable to effectively enter new markets. It is vital here not to conflate the existence of competitors with healthy and effective levels of competition. There are many start-ups in this space, but their scope – in particular due to their insufficient scale – for viable competition against Google is limited.

¹⁷⁷ Ronan Shields, Verizon Media to Shutter Oath Ad Server, Adweek, 4 March 2019, <<https://www.adweek.com/programmatic/verizon-media-to-shutter-oath-ad-server/>>; Yuyu Chen, Will it Blend? Oath Will Combine Disparate AOL-Yahoo Ad Tech Assets, Digiday, 13 April 2017, <<https://digiday.com/media/will-blend-oath-will-combine-disparate-aol-yahoo-ad-tech-assets/>>.

(c) Google's increased data advantage

Another consequence of Google's numerous mergers and acquisitions is its ability to control data across the ad tech stack. Google has access to data through its publisher-side offerings, its intermediaries (like its ad exchange) and through advertiser-side buying technologies. The acquisition of DoubleClick ultimately enabled the integration between data collected through DoubleClick and the rest of Google's offering. This data is in addition to that collected by Google's products outside of ad tech, such as Chrome, Gmail, Maps, etc. Yet, in order to obtain this data, advertisers and publishers are forced to use Google's services at more than one point of the supply chain. As stated by France's Autorité de la concurrence in its 2018 Opinion, many players in the ad tech supply chain emphasise how Google:¹⁷⁸

"only let[s] advertisers who buy ad space via their buying platforms mine data generated from the services they publish. This means that Google combines supplying its data and providing intermediation services and ad servers for advertisers (AdWords, the DCM ad server and the DBM DSP), which would seem to give it an advantage over its competitors. Advertisers can define audience segments based on several types of data that only Google is able to collect. This includes user data, Google's first-party data from the use of Google services, data on websites and third-party inventories that Google sells through the Google Display Network, AdWords and DoubleClick AdX, and data from third-party websites and applications that use DoubleClick and share data with Google."

This greatly reduces the potential for competition by new entrants, as well as existing ad tech players which want to expand their offerings. Further, with the removal of capabilities such as differential price floors, it becomes impossible to counter Google's data advantage. It is impossible to even know what advantages Google is taking for itself, with its 'black box' approach to auction and bidding processes.

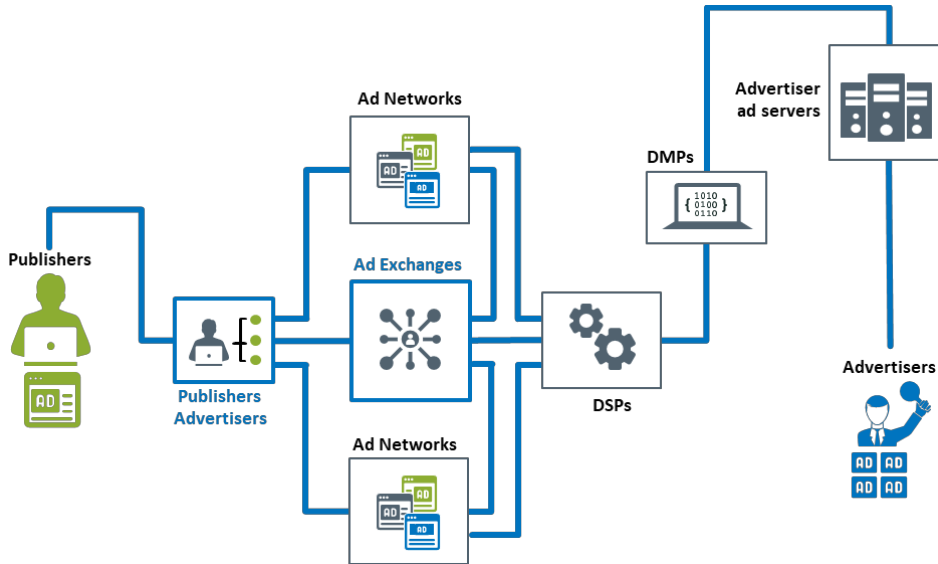
¹⁷⁸ Autorité de la concurrence, Opinion no. 18-A-03 of 6 March 2018 on data processing in the online advertising sector, available in English at <http://www.autoritedelaconcurrence.fr/user/standard.php?id_rub=684&id_article=3133&lang=en>, para 143.

Supplier behaviour

32. What is the extent of vertical integration throughout the ad tech supply chain? Has there been a trend towards more or less vertical integration over time?

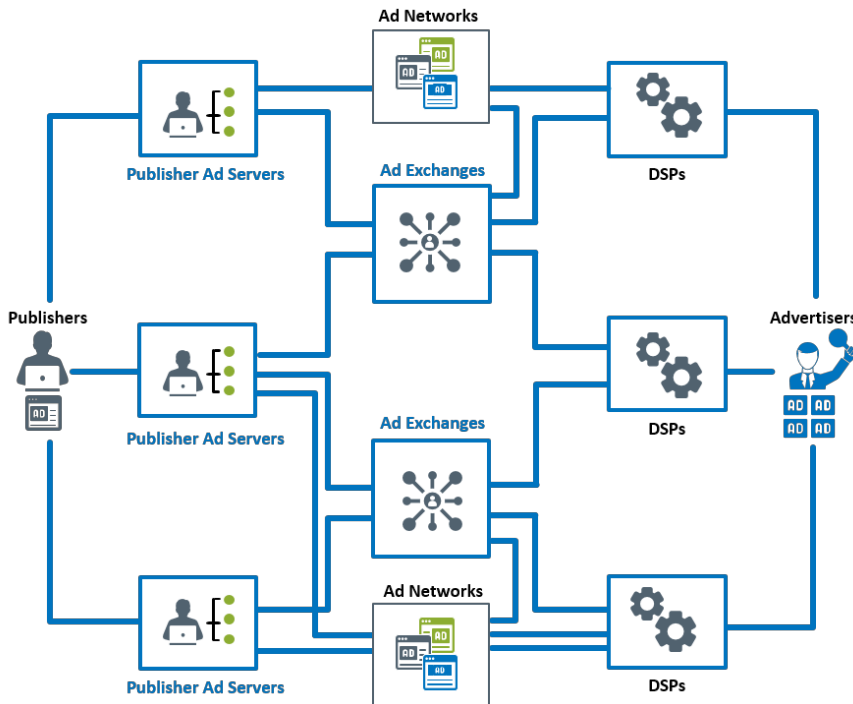
The ad tech pipeline consists of a number of players, as shown below.

Figure 44: The ad tech pipeline



A competitive supply chain would give both publishers and advertisers several options through which to purchase and sell ad inventory. It would look something like **Figure 45**.

Figure 45: A competitive ad tech pipeline



The ad tech supply chain has experienced a significant increase in vertical integration in recent years. Google has, as discussed in **questions 30 and 31**, acquired numerous companies and greatly expanded its market power and activities across the ad tech stack. The pipeline is dominated by Google, which operates the ad tech software that both organises (ad server) and participates in (ad exchange) auctions for the sale and purchase of digital advertising.

For example, a healthy ad tech ecosystem could include at least two moderately sized exchanges that compete for publishers and monetisation. If both exchanges have good data and access, they would be strongly competing for publishers' business. Instead, with the increasing vertical integration engaged in by Google, most recently exemplified by the tying of Google's ad exchange AdX and Google's publisher ad server DFP under Google Ad Manager, the ad tech supply chain is dominated by Google.

Such vertical integration, with the conflicts of interest it brings, provides both the incentive and capacity for Google to leverage this market power up and downstream to benefit its other services. Example of such conduct includes:

- Google's publisher ad server, DFP, shelters its ad exchange, AdX, from real time competition by allowing AdX to submit real time bids to DFP but prohibits third-party ad exchanges from doing so, resulting in lower purchase prices from AdX demand.¹⁷⁹
- Google self-prefers its own products and services. An example was AdX's 'last look' advantage. This enabled Google to use the highest bid from header bidding as the price floor for its own auction and allowed AdX to outbid at will.¹⁸⁰
- Google can take advantage of its vertically integrated stack and the associated opacity of its auction practices by engaging in audience and pricing arbitrage: see **Part A**, at **5.2(c)**.
- Many of the alleged benefits of vertical integration have arisen because of the steps taken by Google to limit information sharing and interoperability within the ad tech stack. Greater efficiencies could be achieved through more competitive alternatives to vertical integration such as common IDs.

33. What are the potential benefits and risks of a more vertically integrated ad tech supply chain? Please provide estimates and examples wherever possible.

The 'benefits' of a more vertically integrated ad tech supply chain are the benefits reaped by the most vertically integrated player, Google. Whereas the rest of the players in the ad tech stack – publishers, advertisers, competitors, and consumers – are utterly disadvantaged.

Google's integrated ad tech services operate along the entire ad tech stack, on both the buy and sell sides of the market. This generates the incentive and potential for anticompetitive conduct. Four main risk areas arise:

(a) Self-preferring behaviour

¹⁷⁹ See Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, 15(1) European Competition Journal 55, 2019, pages 78-79.

¹⁸⁰ See Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, 15(1) European Competition Journal 55, 2019, pages 78-79.

Google's vertical integration on both sides of the market allows it and indeed incentivises it to self-preference between its own ad tech services. This behaviour is examined in depth in our response to **question 25 above**. Examples of self-preferencing include:

- Google's combination of DoubleClick data with its extensive trove of user data, contrary to its representations to the FTC when first acquiring DoubleClick. With this change, DoubleClick ads were able to be targeted and personalised based on data collected through other Google services.¹⁸¹
- The ability of Google's publisher ad server DFP to shelter Google's AdX from real time competition by allowing AdX to submit a real time bid to DFP but preventing third-party ad exchanges from doing so, meaning AdX could obtain lower purchase prices.¹⁸²
- In News Corp Australia's view, as outlined above, Google gave its ad exchange AdX a 'last look' advantage, and therefore used the highest bid from header bidding as the price floor for its own auction. This made it possible for Google's AdX to outbid at will.¹⁸³

(b) Restrictive data practices

Google's inclination to provide access to data seems to be inversely correlated to Google's access to data. As Google has covered increasingly more of the ad tech supply chain and merged its numerous and growing sources of data, it has implemented increasingly restrictive access to important commercial data for publishers. From a competition perspective, restrictive data practices make it harder for an advertiser and a publisher to transact programmatically through a combination of Google and non-Google tools. They also make it more difficult for advertisers and publishers to understand the state of the market, and set their pricing at competitive rates. This does not benefit the buyer or seller, but does benefit Google. Advertisers and publishers are left ever more dependent on Google and its service offering.

Examples of restrictive data practices that are linked to Google's increasing vertical integration are:

- The introduction of the new bid data transfer files: addressed under **questions 13 to 16 and 25 above**.
- The scrambling of user IDs: addressed under **question 36 below** and **questions 13 to 16 above**.
- The removal of cookies on Chrome: addressed under **question 36 below** and **questions 13 to 16 above**.

(c) Foreclosure of competitors

As mentioned above in the response to **questions 30 and 31**, Google's mergers and acquisitions over the past two decades, and its accompanying dominance over the ad tech supply chain, have resulted in the foreclosure of effective competition.

¹⁸¹ See e.g. Julia Angwin, Google Has Quietly Dropped Ban on Personally Identifiable Web Tracking, Propublica, 21 October 2016, <<https://www.propublica.org/article/google-has-quietly-dropped-ban-on-personally-identifiable-web-tracking>>.

¹⁸² See Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, 15(1) European Competition Journal 55, 2019, pages 78-79.

¹⁸³ See Damien Geradin and Dimitrios Katsifis, An EU competition law analysis of online display advertising in the programmatic age, 15(1) European Competition Journal 55, 2019, pages 78-79.

- Google has adopted pricing practices making it difficult for rival ad tech companies to compete against Google in new markets up- or downstream. This is only possible because of Google's own vertical integration.
- Similarly, Google's provision of free services to smaller publishers (which it can afford to do because of its spread across the ad tech stack) acts to lock out of the market start-ups reliant on such smaller publishers.

(d) Opacity of the market

With the increased interconnectedness of Google's products, there has been a decrease in transparency as to how information is shared and auctions are run. This raises questions about the extent to which Google may have been engaging in anticompetitive conduct, such as rent extraction and the retention of a 'last look' advantage (both addressed in the response **question 26 above**). A core reason why Google has been able to create this 'black box' in which its auctions proceed is that it has substantial market power throughout all of the levels of the ad tech stack.

This results in Google being able to engage in conduct like audience and pricing arbitrage. As discussed earlier, in **Part A at 5.2(c)**:

- **Audience arbitrage** – Google can, armed with significant data and a publisher's audience and the ability to internally track users through its platforms, 'usurp' and start targeting the premium audiences of publishers. This enables Google to extract for itself the premium price paid by advertisers for such a premium audience. Publishers are negatively impacted as a stream of revenue is removed and they are severed from their audience, one of its most valuable assets.
- **Pricing arbitrage** – Under Google's use of two consecutive second price auctions, Google could theoretically have engaged in pricing arbitrage through the extraction of higher margins. The process by which this would have occurred is illustrated in **Part A by Figure 14**.

The opacity of the ad tech stack also means there are certain components of expenditure that are simply unattributable. As discussed above, a recent UK study found that an "unknown delta" of costs accounted for 15% of advertiser spend: costs that did not go to the agency, DSP, technology fees, or the publisher.¹⁸⁴

34. Are any market participants tying or bundling their vertically integrated services along the ad tech supply chain, or preferencing their own ad tech services over those of their competitors, in a way that affects your ability to compete in markets for ad tech services?

Google is the prime example of a market participant tying and self-preferencing its products. This is addressed in more detail in the response to **question 25 above**.

In short, Google:

- charges lower prices to publishers and advertisers for its own technologies, encouraging adoption of its services over competition;

¹⁸⁴ Appendix 4, ISBA (UK), *Programmatic Supply Chain Transparency Study, Executive Summary*, May 2020, pages 8-10.
GKSS 509122973v33 120912951 15.5.2020

- offers its ad server to smaller publishers for free;
- has tied together its ad services under Google Ad Manager. This means one contract and one Google representative, meaning more tying of Google's products, leaving less scope to involve various suppliers. This will likely foreclose other ad exchanges.

A direct result of the increased bundling of increasingly vertically integrated services is that publishers are placed even more so in the hands of – and at the mercy of – Google.

35. Are any market participants engaging in behaviour that serves their own interests rather than the interests of their customers?

The clearest example is Google, and News Corp Australia's submissions about the unfair and self-preferential conduct it engages in is presented in our response to **questions 25 and 26 above**. Google holds a leading position in the various services comprising the ad tech stack:

- publisher ad servers (DFP, now rebranded as a module within Google Ad Manager);
- advertiser ad servers (Campaign Manager);
- ad networks (Google Ads, AdSense and AdMob);
- ad exchanges (AdX, now rebranded as a module within Google Ad Manager);
- demand-side platforms (Display & Video 360 (DV360), formerly DoubleClick Bid Manager (DBM)); and
- data analytics (Google Analytics).

The opacity of the ad tech stack, combined with Google's presence across it, facilitates behaviour by Google which serves its own interests over the interests of its customers. It enables a distortion of competition not consistent with a healthy market.

Many of Google's practices, past and present, take advantage of network effects to erect barriers to entry and subtly shift these markets towards monopoly. Specific examples of such behaviour are addressed in detail in the response to **question 25 above**, but in particular:

- greater vertical integration and foreclosure of rivals leads to a less competitive market. This negatively impacts publishers and advertisers; and
- the restrictions on data sharing disadvantages publishers.

36. Are there any terms and conditions regarding data collection, management and disclosure that impact your ability to compete in markets for ad tech services and ad agency services?

News Corp Australia's business model, similarly to many publishers, involves a combination of ad-based and subscription-based revenue. The ad-funded model is highly dependent on Google and other online platforms, as a large volume of readership traffic is required to generate advertising revenue. Any limitation on the collection and use of data by platforms impedes publishers' ability to optimize ad revenues, especially for publishers that can generate higher revenues resulting from their unique audiences and inventories.

While there is a multiplicity of ways in which Google's data collection, management and disclosure negatively impacts News Corp Australia and other publishers' ability to compete, three key developments have impacted News Corp Australia's ability to compete: Accelerated Mobile Pages, restrictive data practices, and the upcoming removal of cookies from Chrome.

Accelerated Mobile Pages (AMP)

The first key issue is the use of AMP. Unlike traditional mobile device pages, AMP pages are loaded on and served by Google servers. The goal is ostensibly to improve the loading speed of webpages. Until 2017, Google's was the only cache to serve AMP content to users. Cloudflare's *Ampersand* then entered the market, allowing publishers to serve AMP content from their own domains. Microsoft announced in September 2018 that it will support Google's AMP in Bing mobile search results and on the Bing app. However, considering Google's vertical integration, neither Cloudflare nor Bing present a significant competitive threat overall. As a result, when using AMP, Google collects all of the first-party data on the performance of publishers' content and advertisements. Google does offer to share this data with publishers, but this leaves publishers dependent on Google to access this commercially important information about publishers' own products. Further, Google does not provide publishers the opportunity to use this data for commercial purposes (through data fragmentation), nor are publishers able to use their existing audience data infrastructure to identify the device being used and serve targeted ads to them.

In order to obtain unique audience figures through, say, first-party tracking, a publisher must use Google-served tracking software. This forces use of Google Analytics. Google does not allow the use of third-party analytics software providers. Further, there is no ability to track ad performance. There is no technology hindrance to ad performance being tracked in the AMP medium. It is likelier that Google restricts access to this data to reduce the relative attractiveness of competing direct advertising businesses, and thereby improve its own advertising business.

Restrictive data practices

As has been discussed above, Google has claimed that its withholding of data is due to a need to adhere to privacy legislation. In News Corp Australia's view, this is doubtful. The information being withheld is of high strategic value and low privacy value. Further, there is inconsistent treatment of this data by Google itself: the viewability of DoubleClick IDs into third party attribution software was restricted citing

privacy concerns, yet these same IDs are viewable through Google Cloud which means, as News Corp Australia understands, Google does ultimately make it available to its Google Cloud customers for a fee. User IDs are the single most important piece of data for publishers, advertisers and intermediaries. When Google acquired DoubleClick, it developed an internal conflict of interest relating to its data sets. To assuage concerns in the process of having Google's acquisition of DoubleClick approved in the United States, a representative of Google gave the following as examples of the "privacy protections and innovations" Google was working on:¹⁸⁵

"We will be included [sic] an opt-out mechanism so that people can choose not to have an advertising cookie place on their computer, and our industry-leading decision to anonymize logs data after 18 months will also cover any log data generated in our ad serving programs that we are testing now.

We are exploring the use of what we are calling 'crumbled cookies' so that user data is not stored just in one cookie, which I know concerns some people.

And we are working on better forms of notice within as so that users can better understand who is behind the ads that they see."

Google also promised that it and DoubleClick would have:

"no control over the advertising, no ownership of the data that comes with that that is collected in the process of the advertising [sic]. That data is owned by the customers, publishers and advertisers, and DoubleClick or Google cannot do anything with it."

Since that time, we have seen Google increasingly obtain complete access and rights to data across each of its products and services, and a correlative increase in the restriction of third-party access to this data, including user IDs. With each step, Google has negatively affected competition along the ad tech stack, entrenching its own market power.

- On 1 March 2012, Google updated its privacy policy across all of its products and services. Putting aside the numerous concerns and investigations stemming from this change,¹⁸⁶ including €150,000 and €900,000 fines by France and Spain's data protection authorities, respectively,¹⁸⁷ this treatment of users as single users allowed the company to more easily collect and use personal data across all of Google's products.
- In the years following, Google started to 'hash' the DoubleClick ID shared externally. Each hashed user ID is different. It is not repeated for the same ultimate user. In effect, this meant third-party ad tech competitors can no longer use the DoubleClick ID to target users. Instead, players must rely on cookie syncing to link together user behaviours across impressions. This reduces third parties' ability to compete for ad impressions, and reduces the competitive

¹⁸⁵ An Examination of the Google-DoubleClick Merger and the Online Advertising Industry: What are the risks for competition and privacy? Hearing before the Subcommittee on Antitrust, Competition Policy and Consumer Rights of the Committee on the Judiciary, United States Senate, One Hundred Tenth Congress, First Session (27 September 2007) Serial No. J-110-25 <<https://www.govinfo.gov/content/pkg/CHRG-110shrg39015/html/CHRG-110shrg39015.htm>>.

¹⁸⁶ See e.g. Claire Davenport, EU regulators want Google to halt new privacy policy, Reuters, 3 February 2012, <<https://www.reuters.com/article/eu-google/eu-regulators-want-google-to-halt-new-privacy-policy-idUSL5E8D31SC20120203>>; Sara Forden, Google Privacy Policy Criticised by State Attorneys General, Bloomberg, 23 February 2012, <<https://www.bloomberg.com/news/articles/2012-02-22/state-attorneys-general-tell-google-privacy-policy-is-a-concern>>.

¹⁸⁷ France fines Google over data privacy, Reuters, 9 January 2014, <<https://www.reuters.com/article/us-france-google-fine/france-fines-google-over-data-privacy-idUSBREA0719U20140108>>; Spain privacy watchdog fines Google for breaking data law, Reuters, 20 December 2013, <<https://uk.reuters.com/article/us-spain-google-privacy/spain-privacy-watchdog-fines-google-for-breaking-data-law-idUKBRE9BI12Z20131219>>.

intensity of bidding processes. News Corp Australia understands that, in contrast, Google's intermediary services use a common ID that is matched with Google's other data – such as data obtained through Gmail and Chrome (since the 2016 privacy policy change).

- In 2016, Google changed its privacy policy (see **Figure 34 above**) so that it could combine consumer-level DoubleClick data with data from other Google services. Users have to opt out to stop Google combining this data.
- In 2018, Google (purporting to rely on the European privacy law GDPR) decided it would no longer allow advertisers to export encrypted IDs. This change, by removing scope for interoperability, severely limits advertisers' ability to measure the reach of Google campaigns against other platforms. It eradicates independent attribution, and forces advertisers to buy into Google's entire ad tech stack in order to obtain any substantial benefit from its data. Advertisers can access the now restricted data in aggregate form through Google's Ads Data Hub, but not otherwise.
- Also purporting to rely on the GDPR, Google required publishers to obtain users' consent to data collection on behalf of Google. This gives Google the same rights and access to this data as publishers.
- In September 2019, Google announced changes to the bid data transfer files (discussed above at **page 74**). Under the bid data transfer file restrictions, publishers are not able to link the bidding data from the AdX and Exchange Bidding side to the impression-level data on the DFP side. This leaves publishers blind: unable to see what the market looks like, and unable to set bidding rules and price floors accordingly. It creates an artificial and impractical divide, nearly as if an auctioneer is unaware of the reserve price of the product they are selling. Again, in News Corp Australia's view, this is not a requirement of any existing or proposed privacy regulation and is not necessary. It is not necessary to protect user privacy. The true beneficiary of this change is Google. An important consequence of this change is that publishers which may wish to move away from Google products will not have the information required about the present market and its risks to do so effectively.
- The most recent step Google has taken is the 2020 announcement that, in 2022, Google will remove third-party cookies from its internet browser Chrome, discussed further below.

Removal of cookies from Chrome

In light of the increasingly limited data made available, publishers, advertisers and intermediaries have turned more to cookie-syncing in order to recognise users across the web for behavioural targeting. As explained in **Box 5 above**, cookies are small text files that sit on the user's computer to store information specific to that user. Targeted advertising can work through the use of cookies, which indicate whether a consumer has visited an advertiser's site or searched for similar products. Advertisers are willing to pay for more this targeting capability: up to 2.68 times more.¹⁸⁸ (Although, studies show

¹⁸⁸ Howard Beales, 'The Value of Behavioural Targeting' (Working paper, Network Advertising Initiative, 24 March 2010) <https://www.networkadvertising.org/pdfs/Beales_NAI_Study.pdf>, page 3. See also Veronica Marotta, Vibhanshu Abhishek and Alessandro Acquisti, 'Online Tracking and Publishers' Revenues: An Empirical Analysis' (Working paper, May 2019), page 4.

that publisher revenue only increase about 4%.¹⁸⁹) The demand-side and supply-side platforms periodically synchronise their data in order to match ad requests with users based on the cookies that each side holds. The process is imperfect: generally only 60% of the data is correctly matched and the process can cause latency and lag issues for page and ad loading.¹⁹⁰ This already places players which rely on cookie syncing at a disadvantage relative to major platforms like Google and Facebook.

In 2020, Google has announced its Privacy Sandbox. The project mission is to create a "*thriving*" web that is "*private by default*".¹⁹¹ Google has stated that third-party cookies are to be replaced by mechanisms designed to preserve privacy and open standards, a set of APIs. In practice, this means that, while it keeps access to its own first-party data, Google will be removing all third-party cookies on Chrome – cookies relied upon by other players to function effectively in the digital advertising space. In order to perform advertising functions (e.g. frequency capping, targeting, etc), marketers and ad tech vendors will access aggregated data, rather than the underlying user-level data, through a series of APIs. They will be reliant on Google for this data.

The removal of third-party cookies is not a requirement of any privacy legislation or regulations worldwide. Publishers obtain informed user consent to collect and use data on their behalf, and on behalf of ad tech operators. Rather, the removal of cookies from web browsers cements and expands Google's market power.

Some commentary has suggested that the removal of third-party cookies from browsers is not cause for concern for publishers, because publishers' first-party data will now prove more valuable, drawing in advertisers. This is unlikely.

First, as has become apparent from Safari and Firefox's removal of cookies, publishers are facing revenue hits from this change. Indeed, with Chrome also removing cookies, there will be a greater number of uninformed bidders at auctions and a greater number of uninformed publishers setting price floors that do not reflect the realities of the market. Both help Google to buy impressions for less, further eating into the profitability of publishers.

Second, the move is likelier to send buyers into the walled gardens of Google, rather than to publishers for what is inevitably a smaller and less useful collection of data. This will also heighten barriers to entry for new innovators, as advertisers resort to the data held by large incumbents like Google.

The Privacy Sandbox is a telling example of how Google can and does unilaterally interpret industry standards as it sees fit, to its own advantage, and to the detriment of the digital advertising industry.¹⁹²

¹⁸⁹ Veronica Marotta, Vibhanshu Abhishek and Alessandro Acquisti, 'Online Tracking and Publishers' Revenues: An Empirical Analysis' (Working paper, May 2019), page 6.

¹⁹⁰ Damien Geradin and Dimitrios Katsifis, Trust me, I'm fair: Analysing Google's latest practices in ad tech from the perspective of EU competition law, TILEC Discussion Paper No DP 2019-029, Tilburg Law & Economics Center, University College London, 7 October 2019, page 12; Martin Kihn, 'Ad Tech Needs A Shared ID Solution ASAP', *AdExchanger* (4 September 2018) <<https://www.adexchanger.com/data-driven-thinking/ad-tech-needs-a-shared-id-solution-asap/>>.

¹⁹¹ The Chromium Projects, The Privacy Sandbox, <<https://www.chromium.org/Home/chromium-privacy/privacy-sandbox>>.

¹⁹² See e.g. commentary by Ari Paparo, 'Google, You Finally Really Did It!', *AdExchanger* (14 January 2020) <<https://www.adexchanger.com/data-driven-thinking/google-you-finally-really-did-it/>>.

Appendix 1: Timeline – Key developments in the ad tech industry since the 1990s

Date	Development	What happened?
Mid-1990s	The first ad networks emerged	The first ad networks emerged to aggregate ad inventory from several different publishers. The networks then bundled this inventory and sold it to advertisers.
1996	DoubleClick launched	In 1996, DoubleClick entered the market. At the time, DoubleClick offered an ad network and a publisher ad server. Initially, ad servers performed relatively rudimentary functions, such as serving up the creative, tracking clicks and identifying users through cookies.
4 September 1998	Google launched	Google launched with one product, 'Google Search', a web-based search engine, based on the premise that the pages with the most links to them from other highly relevant Web pages must be the most relevant pages associated with the search. At the outset, there was no personalisation of search results, and advertisements were limited to simple text ads.
5 October 1998	DoubleClick developed targeting and retargeting solutions	DoubleClick launched two new products: DataBank, that allowed for targeting users based on the known correlations between users' activity (the types of sites they visited) and purchase patterns, and Boomerang, a retargeting solution. Boomerang was the first retargeting solution.
1998	The first ad exchange launched	OpenX, one of the first basic ad exchanges, launched as an open source project.
23 October 2000	Google launched AdWords	Google launched AdWords, an advertiser ad server and ad network. It allowed advertisers to bid on keywords to have ads targeted to users, based on information about the user's browsing habits and search keywords, show up on pages within Google Network.
13 November 2002	Applied Semantics launched AdSense	In November 2002, Applied Semantics launched AdSense, a pay-for-performance interactive advertising serving product.
March 2003	Google launched Content-Targeted Advertising Program	Google launched its Content-Targeted Advertising Program that would later be renamed AdSense. The advertisements came from AdWords advertisers, but rather than being related to the user's search intent, they were related to the content of the page.
23 April 2003	Google acquired AdSense	Google acquired Applied Semantics and its product AdSense. Google incorporated the technology from Applied Semantics and renamed its Content-Targeted Advertising Program to AdSense.

Date	Development	What happened?
February 2004	Facebook launched	Facebook was launched.
19 August 2004	Google conducted its IPO	Shares were issued for US\$85 each, valuing the company at US\$23 billion (but the IPO was only for 8% of all of Google's shares; the remainder would continue to be owned by insiders).
2005	Ad exchanges introduced	In 2005, the first ad exchanges were introduced.
2005	Third-party data companies introduced	Around this time third-party data companies focused on pulling together cookies and inferring information about users from the cookies.
2005	Google acquired Urchin Google launched Google Analytics	Google acquired Urchin, a website traffic analysis business. Following the acquisition of Urchin, Google launched its own Google-branded analytics program.
10 April 2006	AdMob launched	Independent mobile advertising platform, AdMob, was launched.
August 2006	YouTube advertising platform launched	YouTube launched its video advertising platform.
October 2006	Google acquired YouTube	Google acquired YouTube for \$1.65 billion.
2007	AdMeld launched	AdMeld was the first software that optimised and managed multiple ad networks and exchanges for publishers. Publishers used AdMeld to manage these various networks and maximize revenues.
2007	DSPs and SSPs introduced	Several demand-side platforms (DSPs) (including Invite Media) were launched, which allowed advertisers to create campaigns targeting particular audiences. The DSPs would then purchase inventory (i.e. ad impressions) to fulfill the campaigns from several different networks or exchanges. Several supply-side platforms (SSPs) were also introduced around the same time. SSPs tried to evaluate where publishers could generate the most revenue for a particular impression, and they introduced some real time bidding (RTB) mechanics to the bidding process.
14 April 2007	Google acquired DoubleClick	Google acquired DoubleClick for \$3.1 billion.
30 April 2007	Yahoo acquired Right Media	Yahoo acquired Right Media for US\$680 million, whose exchange, at that time, was a leading competitor.

Date	Development	What happened?
2009	Real Time Bidding was introduced	AdMeld launched RTB Exchange. Other RTB exchanges (e.g. Rubicon, Index) were launched after this. At this time, however, RTB exchanges could not talk to one another.
17 September 2009	DoubleClick Ad Exchange launched	Google launched its own ad exchange platform DoubleClick Ad Exchange (AdX).
17 September 2009	AdWords connected with AdX	AdWords expanded to submit bids for display inventory to AdX. AdWords did not submit bids to other exchanges.
9 November 2009	Google acquired AdMob	In 2009, Google agreed to acquire AdMob, which was by then a leading mobile ad network, for US\$750 million.
22 February 2010	Google launched DoubleClick for Publishers	Google launched its Publisher ad server, DoubleClick for Publishers (DFP).
2010 onwards	Google restricted access to the DoubleClick IDs of publishers' readers	Google commenced by hashing or encrypting the DoubleClick IDs. Google's ad server shared these IDs with Google's ad exchange, AdWords/AdSense, and Google's DSP (DV360).
3 June 2010	Google acquired Invite Media	Google acquired the world's largest DSP and bid manager, Invite Media, in 2010 for \$81 million. Invite Media developed a DSP that enabled advertisers and agencies to bid in real time for display ad inventory and to optimize display ad campaigns across multiple ad exchanges in a single interface. This bid manager was later rebranded as DoubleClick Bid Manager (DBM), which was then renamed DV360. DV360 now sits as a module within Google Marketing Platform.
22 February 2010	Google introduced Dynamic Allocation	In 2010, Google introduced Dynamic Allocation, which allowed AdX to submit real time bids, so it no longer participated in the waterfall. Dynamic Allocation became a condition to access AdX demand.
June 2011	Google acquired AdMeld	Google acquired Admeld for US\$400 million in 2011. Google then incorporated AdMeld into Adx.
1 March 2012	Google updated its privacy policy across all of its products and services	Prior to 2012, Google siloed the data collected in each of its products and services. With these changes, Google said it would treat its customers 'as a single user' across its products and services. This meant that, for example, data collected through Chrome or Gmail could now be used in users' interactions with Google Search or YouTube.

Date	Development	What happened?
June 2012	Facebook launched Facebook Exchange	Facebook launched its own ad exchange Facebook Exchange (FBX). FBX allowed advertisers to use advertisers' own data and place real time bids on Facebook inventory, together with user targeting and retargeting segments of the audience. Its reach, however, was confined to desktop usage.
2012-2013	Microsoft left the ad tech market and sold Atlas to Facebook	In 2012-13, Microsoft formally exited the ad tech space. It first took a \$6.2 billion write-down for aQuantive , its web-advertising business, then sold its ad server, Atlas , to Facebook.
October 2013	Google created new device ID	In 2014, Google created a new type of device ID called Google Play Services ID for Android (AdID).
2 July 2014	Facebook acquired LiveRail	Facebook acquired the video ad exchange LiveRail in 2014. The deal was estimated to be valued at US\$400-500 million.
9 January 2015	Yahoo closed down Right Media Exchange	Yahoo closed its exchange to third parties and non-Yahoo websites.
28 April 2015	Twitter acquired TellApart	TellApart, an ad tech start-up that specialised in re-targeting, was bought by Twitter in 2015 for US\$479 million.
July 2015	Google introduced Enhanced Dynamic Allocation	Enhanced Dynamic Allocation enabled publishers to programmatically sell ad slots (often high-value) to Google advertisers, even if the publisher had previously sold that ad slot through a direct deal. AdX used an adjusted price from the highest direct deal as the reserve price for its own auction. It only applied to impressions sourced by AdX. Originally, Google allowed this feature to be toggled on or off but then it became a product feature of DoubleClick which publishers could not disable.
August 2015	Google restricted access to YouTube inventory	In August 2015, Google restricted competing DSPs' access to YouTube ad inventory. The only way advertisers could buy YouTube ads was through Google's ad tech stack.
2015-2016	Header bidding developed	Rubicon and Index developed Dynamic Allocation without Google's involvement. This led to the introduction of <i>header bidding</i> in 2016.
7 October 2015	Google introduced Accelerated Mobile Pages	In October 2015, Google announced the launch of its Accelerated Mobile Pages (AMP) project, which defined a set of standards for mobile pages. AMP, however, was not compatible with header bidding.
28 March 2016	Header bidding solution to AMP developed	Rubicon developed a header bidding solution to Google's AMP. This allowed publishers to use header bidding on pages which use the AMP format.

Date	Development	What happened?
28 June 2016	Google started creating 'Super Profiles'	Before 2016, data sets collected through DoubleClick (e.g. web browsing records, ad data) using tags on websites and data collected from other Google services (e.g. Gmail data, Chrome browser sign-in data, and other personally identifiable data) were kept separately in isolated silos within Google. In 2016, Google made a change in its privacy policy that allowed Google to combine consumer-level DoubleClick data (collected from publishers) with data from other Google services, and identify users across devices and services.
13 April 2016	Google announced testing of Exchange Bidding	Google announced that First Look would be available to all DFP clients globally, and that it was testing Exchange Bidding in Dynamic Allocation (EBDA) with select partners, including Index Exchange and Rubicon Project.
May 2016	Facebook shut down Facebook Exchange and LiveRail	In 2016 Facebook shut down both LiveRail and Facebook Exchange.
November 2016	The Facebook Atlas ad server ceased operating	Facebook shut down its Atlas ad server.
2017	Google introduced Exchange Bidding	Exchange Bidding (renamed to Open Bidding in August 2019) was introduced as a feature within DFP that allowed publishers using DFP to access real time demand from a variety of competing ad exchanges.
April 2017	TellApart was shut down	In April 2017 Twitter announced on an earnings call that it planned to shut down.
13 June 2017	Verizon acquired Yahoo and merged it with AOL to form Oath	In 2017 Verizon acquired Yahoo's core internet business for around \$US4.8 billion. It then merged Yahoo with Verizon's AOL unit to create Oath.
12 September 2017	Pre-Bid launched	In September 2017, AppNexus went live with Pre-bid, an open-source header-bidding solution.
October 2017	Google shared bid data transfer file	Google shared the bid data transfer file with publishers in late 2017.
25 May 2018	Google restricted access to user IDs	Google restricted access to Google's user IDs from competing advertiser and publisher ad servers.
12 June 2018	Unlockd entered voluntary administration	Unlockd, founded in 2014, was a platform that allowed consumers using Android operating systems to opt into receiving targeted advertisements, in return for payment. In June 2018 Unlockd entered into voluntary administration.
27 June 2018	Google introduced Google Ad Manager	In 2018, Google combined DFP with AdX. The combined products were rebranded Google Ad Manager.

Date	Development	What happened?
27 June 2018	Google rebranded AdWords	In 2018 Google rebranded AdWords to Google Ads.
24 July 2018	Google launched Google Marketing Platform	Google rebranded the DoubleClick Advertiser products and the Google Analytics 360 Suite under the combined Google Marketing Platform brand.
2017- 2018	Bid shading services were introduced	Bid shading algorithms / services were introduced to counter the impact of unified or first price auctions which were first introduced from 2017 by ad exchanges other than Google, namely, Index Exchange, Open X, Rubicon Project and AppNexus. Services included Estimated Market Rate (by Rubicon), Intelligent Bidding (by Pubmatic).
2018	Google introduced bid shading services	During 2019, Google introduced bid shading services, known as 'automated bid strategies' and 'optimized fixed bidding', which it made available through Google DV360.
September 2019	Google introduced the unified auction	In September 2019, Google introduced the <i>unified auction</i> . Under this system, bids from direct deals were compared with all of a publisher's non-guaranteed advertising in a single first-price auction.
April 2019	Sizmek exited the market	Sizmek , which was one of the leading independent DSPs, filed for bankruptcy.
April 2019	Google introduced Unified Pricing rules	Google restricted publishers' ability to differentiate pricing control through unified price floors.
15 May 2019	Google required non-Google ad servers to use a Google API to serve ads on YouTube	Historically, advertisers on YouTube were able to use non-Google ad servers to measure performance independently and verify the data supplied by YouTube. In May 2019, Google mandated that all non-Google ad servers must use a Google API to serve ads on YouTube.
Mid-2019	OpenX shut down its ad server	In 2013 OpenX was the second largest ad server after Google. In mid-2019, it shut down its ad server product.
5 September 2019	Google introduced ' <i>Minimum Bid to Win</i> '	In September 2019 Google introduced the <i>Minimum Bid to Win</i> feature. This meant that buyers in AdX and Exchange Bidding received feedback on auction results, learning the lowest bid that would have won (<i>Minimum Bid to Win</i>).
5 September 2019	Google restricted data given to publishers	Google's publisher ad server removed publishers' ability to link bid data to sales data.
2019/2020	Google restricted advertisers' use of their preferred data in targeting on YouTube, Search, and Gmail	Google restricted advertisers' use of their preferred data in targeting on YouTube, Search and Gmail. This prevented advertisers from using non-Google targeting data.

Date	Development	What happened?
14 January 2020	Google restricted third-party cookies on Chrome	Google announced that it plans to phase out support for third-party cookies in Google Chrome within two years.
2020	Verizon Media closed Oath Ad Platform ad server	Verizon Media recently announced via AdWeek that it planned to shut down its Oath Ad Platform ad server in 2020.
11 April 2020	Facebook descaled Audience Network	In April this year Facebook announced that its DSP Audience Network would not fill any ad requests to website and in-stream placements and would only bid on advertising in mobile apps.

Appendix 2: Glossary

Term	Definition
Accelerated Mobile Pages	A set of standards for mobile pages developed by Google.
ad exchange	A digital marketplace for selling ad inventory, often via a real time bidding auction.
ad network	A network that buys ad inventory from publishers to repackage to sell to advertisers. It can buy and sell directly, buy and sell inventory on ad exchanges, or some combination of both.
AdMob	Google's mobile app ad network.
AdSense	Google's publisher-facing ad network.
advertiser ad server	A tool that is used by advertisers to manage their campaigns and track where their ads are being served in one location.
AdX	Google's ad exchange. As of June 2018 it sits as a module within Google Ad Manager.
AMP	See <i>Accelerated Mobile Pages</i> .
API	See <i>application programming interfaces</i> .
application programming interfaces	A set of routines, protocols, and tools for building software applications.
bid data transfer file	Files which contain the bidding data from an ad exchange.
bid shading	A strategy (in the form of a bidding algorithm) used by advertisers (including ad tech service suppliers) in the digital auction to optimise to the lowest possible winning bid based on bidding data from previous auctions.
bidding data	Data that is collected on bids and bidding behaviour within the digital auction.
Campaign Manager	Google's rebranded advertiser ad server. As of July 2018, it sits as a module within Google Marketing Platform. Google plans to consolidate the features of this service into DV360, another module within Google Marketing Platform.
cookie matching	See <i>cookie syncing</i> .
cookie syncing	The process of matching different cookie IDs from different ad tech vendors to create a common ID for each user.

Term	Definition
cookie(s)	A small text file that websites deposit onto a user's browser. These files track users, recording and reporting back to the website about which sites a user visits and items purchased.
cost-per-click	A basis for pricing that refers to a cost per ad that is clicked on by a user.
cost-per-mille	A basis for pricing that refers to a cost per one thousand impressions.
CPC	See <i>cost-per-click</i> .
CPM	See <i>cost-per-mille</i> .
data management platform	A tool used by advertisers to collect and analyse data to assist with the targeting, evaluating and managing of ad campaigns.
demand side platform	A tool used by advertisers to bid on and purchase ad inventory.
DFP	See <i>DoubleClick for Publishers</i> .
Display & Video 360	Google's demand side platform. As of July 2018 it sits as a module within Google Marketing Platform.
DMP	See <i>data management platform</i> .
DoubleClick Ad Exchange	The former name for Google's ad exchange, now known as AdX. See <i>AdX</i> .
DoubleClick Bid Manager	The former name for Google's demand side platform, later renamed to Display & Video 360 which, as of July 2018, sits as a module within Google Marketing Platform.
DoubleClick Campaign Manager	The former name of Google's advertiser ad server, later renamed to Campaign Manager which now sits as a module within Google Marketing Platform. See <i>Campaign Manager</i> .
DoubleClick for Publishers	Google's publisher ad server. As of June 2018 it sits as a module within Google Ad Manager.
DoubleClick Studio	The former name for Google's ad creation platform. It has been renamed to Studio. As of July 2018 this sits as a module within Google Marketing Platform. Google plans to consolidate the features of this service into DV360, another module within Google Marketing Platform.
DSP	See <i>demand side platform</i> .
DV360	See <i>Display & Video 360</i> .
Dynamic Allocation	An ad exchange auction feature introduced by Google into DoubleClick for Publishers in 2010 which allowed AdX to compete on the basis of real time demand, rather than through the waterfall.

Term	Definition
Enhanced Dynamic Allocation	An ad exchange auction feature introduced by Google into DoubleClick for Publishers in 2015 which allowed AdX to compete in real time ahead of direct deals.
Exchange Bidding	An ad exchange auction feature introduced by Google into DoubleClick for Publishers in 2018 which allowed publishers to connect third-party exchanges to AdX and for those exchanges to compete with AdX in a unified auction.
GAM	See <i>Google Ad Manager</i> .
Google Ad Manager	Google's publisher-facing platform, created in June 2018, containing DoubleClick for Publishers and AdX within it as modules.
Google Ads	A Google platform that is both advertiser ad server and ad network.
Google AdWords	The former name of Google Ads, which was changed in June 2018. See <i>Google Ads</i> .
Google Audience Center 360	Google's data management platform which, as of July 2018, sits as a module within Google Marketing Platform.
Google Display Network	Google's advertising network for display ad inventory which sits within Google Network.
Google Marketing Platform	One of Google's advertiser facing platforms. It is a unified advertising platform that holds Display & Video 360, Campaign Manager, Audience Center, Search Ads 360 and Studio.
Google Network	Google's ad network for first and third-party ad inventory.
header bidding	A technology solution that permits publishers to send their inventory to multiple exchanges synchronously.
impression	An impression is when an ad (or any other form of digital media) is fetched from its source and rendered on a user's screen. They are not action-based (i.e. the ad does not need to be clicked to be counted as an impression). Rather, they are defined by whether a user potentially sees the ad.
impression-level data	Data that is collected on the sale of impressions which is presented on an impression-by-impression basis.
inventory	Inventory refers to the number of ad impressions available for sale on a website or an app. There is <i>guaranteed inventory</i> (also called premium inventory, this refers to inventory sold through direct channels in advance, rather than through real time bidding) and <i>real time inventory</i> (sold through the real time auction process, and also known as remnant, secondary, or class 2 inventory).

Term	Definition
last look	A feature introduced by Google through Dynamic Allocation in 2010 in DoubleClick for Publishers which allowed AdX to observe all other exchange bids before submitting its own.
line item	Line items represent an advertiser's commitment to purchase inventory. A line item specifies the specific number of ad impressions (CPM) or user clicks (CPC) that the advertiser commits to buy, as well as where the ad will appear and, in some case, when the ad may be shown. For example, a buyer will sent the publisher a purchase request, which will contain one or more line items. Inside each line item, the publisher sees the requirements of the buyer. There are <i>guaranteed line items</i> (those that the publishers contractually require to be served a specific number of impressions, and for which the ad manager would ensure this by reserving ad inventory) and <i>non-guaranteed line items</i> (those that are not reserved nor contractually obligated to deliver ad impressions).
Minimum Bid to Win	A feature introduced by Google into AdX that gives buyers from an auction in AdX information on the lowest bid that would have won that auction.
Open Bidding	The new name for Exchange Bidding changed by Google in August 2019. See <i>Exchange Bidding</i> .
publisher ad server	A tool used by publishers to manage their ad inventory. It stores the publisher's ad inventory and records criteria about how the publisher wants to manage and fill it ad space.
real time bidding	An automated digital auction process that allows advertisers to bid on ad space from publishers in real time.
RTB	See <i>real time bidding</i> .
SSP	See <i>supply-side platform</i> .
Studio	Google's new name for DoubleClick Studio. As of July 2018, it sits as a module within Google Marketing Platform. Google plans to add features from this product to Display & Video 360, another module within Google Marketing Platform. It now sits as a module within Google Marketing Platform. It allows creative agencies to make rich media creatives.
Supply-side platform	A tool used by publishers to manage and sell their ad inventory. These functions are increasingly being integrated with ad exchanges. Today, the terms SSP and ad exchange are used interchangeably.
the waterfall	An old form of selling ad inventory whereby publishers sold impressions on a cost per mille basis to demand partners in an order based on the publishers' average historical yield from those demand partners.

Term	Definition
unified auction	Google's first price auction within AdX, which is a digital auction process in which all demand sources compete equally at once in a single auction.
Unified Pricing Rules	Rules introduced by Google in 2019 into Google Ad Manager that set a uniform floor price for all bids and restricted publisher's ability to set different floor prices for different demand sources.
Universal ID	A type of cookie replacement that allows all parties (publishers, advertisers, and intermediaries) to recognise consumers.
user data	Data that is collected from users accessing a range of digital content across devices, websites, digital platforms, apps, and other digital spaces.
user IDs	Randomised values that are used to represent a specific user who is browsing the web.
walled garden(s)	Digital platforms that allow advertisers to only buy first-party display inventory (i.e. advertising space on their own platforms) using their platform. Examples include Facebook, YouTube (owned by Google) and Amazon.

Chairman Graham, Ranking Member Feinstein, and distinguished members of the committee, thank you for the opportunity to appear before you today to discuss privacy and competition policy in the digital advertising ecosystem.

I have spent the bulk of my professional career thinking about the impact of advertising on consumers and the internet. As one of the early pioneers of digital advertising technology, I helped build one company—Right Media—that was acquired by Yahoo! in 2007 and co-founded another, AppNexus, that was acquired last year by AT&T. Though I'm speaking today in my capacity as a private citizen, my point of view is informed by 15 years of building advertising technology in partnership with the world's largest digital publishers and marketers.

I am here today because I believe the lack of competition in the internet sector is harming consumers and preventing innovation. In addition, I believe that consumers need rights to protect their personal data. As I will discuss more below, these two issues overlap: it is the lack of consumer data protections and the illusion that advertising comes at no cost to consumers that has allowed a few companies to become internet monopolies.

Over the past twenty-five years, the internet has transformed our economy, our culture, even our politics. As with prior technological revolutions like the railroad, the telegraph, and the telephone, it has collapsed space and time and drawn people together in closer connection with each other—often in ways that improve our shared experience. Like these earlier innovations, the internet has also created opportunities for entrepreneurs to build massive, innovative companies that gobble up competitors and push the boundaries of our laws.

Unlike the railroad, the telegraph, and the telephone, the internet comes at little or no direct cost to consumers. Brands invest billions of dollars to advertise with internet companies; these internet companies, in turn, make their content free to the public. For the cost of viewing ads, people like you and me get to enjoy social media, film and video, games, news, and information. In this sense, advertising is the economic network that enables the internet as we know it.

This economic network is unique because it has three parties: the consumer, the content producer, and the advertiser. The content seems free to the consumer because the advertiser pays for it, but of course there is no free lunch: the cost to the consumer is her attention and the personal data that the content producer gets through the interaction. For instance, when the consumer checks the weather on her phone, the weather app knows her precise GPS location, and will use that to sell ads to advertisers with stores nearby. In addition, the weather app may sell her data to other companies, or build profiles to determine where she likes to shop, to travel, to sleep, to work.

In a competitive landscape, if the consumer perceives this cost to be too high, she will switch to a different service. For instance, a consumer that doesn't like how this weather app uses her data could switch to a different one. That assumes three things: that she knows how her data is being used, that she can take her data with her, and that there is enough competition that there is actually another option. Today each of these assumptions are false. We do not know how our data is being used. We cannot take our data with us. And in far too many cases, we do not have viable competitive options.

Transparency: What do you know about me

As an informed consumer, I want to know how companies use my data. Even with my computer science degree and 15 years of ad tech

experience, it is hopeless to try to follow my data around the internet. I don't read 15 pages of privacy policy legalese before I visit a web site. I often allow third-party cookies because many sites break if I don't. I deleted my Facebook account, but I use WhatsApp and Instagram. I use Waze for driving directions, so Google knows exactly where I live. Technology has so pervaded our everyday lives that it's almost impossible to know what data is being collected.

Once that data is collected, it is often shared to third parties without my knowledge or consent. Aside from being creepy, it's dangerous. Any of these third parties that has a security breach will expose my information. If I ask the original data collector to delete my information, my data is still out there in the hands of everyone they shared it with. Our leaky data ecosystem is far too easy to exploit.

Portability: I can take it with me

As the Electronic Frontier Foundation says, "*Data portability* allows a user to take their data and move it to a different platform. If it were more feasible for users to take their data and move elsewhere, Facebook would need to compete on the strength of its product rather than on the difficulty of starting over. And if the platform were more interoperable, smaller companies could work with the infrastructure Facebook has already created to build innovative new experiences and open up new markets."

This data portability should apply to all internet services. For instance, if my search history on Google enables them to deliver a more personalized search experience, I should be able to transfer that search history to Bing so that I get an equivalent experience there. Similarly, I should be able to transfer my order history at Amazon to Walmart so that they can offer me the same level of personalization – but only if I want them to.

Implementation: A bill of rights and a privacy agency

We need a data bill of rights that establishes some first principles for what consumers should expect from companies that have access to their data. Some basic principles that we might start with:

- I want to know any time that someone collects data about me.
- I want to know where that data resides and that it is properly protected from cybersecurity attacks.
- I want to give explicit permission before that data is shared with another service, even if that service happens to have the same corporate parent
- I want the ability to correct or remove my data.
- I want the ability to take all of my data with me, in a usable form, and transfer it to another company or service.

These seem like fundamental rights, but given the complexity and rapid change in the internet space, how can the government ensure that they are enforced? Regulation could inadvertently put more power in the control of a few companies, or create a barrier to entry for larger companies that can afford the compliance burden. Leaving data protection to the states would create such an unfair compliance burden on small businesses.

David Siegel [recently proposed](#) a way to protect consumers without the risks of counterproductive regulation: “To protect the public interest and their own businesses, these companies should set up a robust self-regulatory organization along the lines of the Financial Industry Regulatory Authority (FINRA), an SRO that derives its authority from the Securities and Exchange Commission. Thanks to its independence from bureaucratic government agencies, FINRA is effective—and relatively nimble—at policing securities firms with sensible rules. Given the extraordinarily rapid pace of technological change, it is unrealistic to expect governments to devise, update, and enforce effective rules by themselves. Such an approach can hinder innovation and produce marketplace advantages for the largest companies. And in the tech world, everything from consumer

behavior to hardware and software capabilities evolves too quickly for static statutes to remain meaningful for long.”

My story: Competing with the Google super-monopoly

As an entrepreneur, I competed directly with Google in one of their many business areas, that of ad technology. I know this is a very complex ecosystem, so I will focus on one particular example that clearly shows the risks of uncontrolled monopoly power.

In 2008, I invented a technology called real-time bidding which turned every ad on the internet into a real-time auction. Advertisers could use our technology to choose which ads to bid on, driving up the price for content producers. This invention created a virtuous cycle where advertisers saw better results from advertising and publishers increased their ad revenue, driving rapid adoption of “programmatic advertising”. Over the next few years, AppNexus doubled in size every year, growing from 18 employees to over 600 and was valued at over \$1 billion dollars.

Google acquired DoubleClick, the ad technology market leader, in 2007. With the rise of programmatic advertising, its dominance was at risk, so Google spent over \$1 billion to acquire a series of small companies (Invite Media, AdMeld, Teracent, Spider.io). As competition heated up, AppNexus signed a major strategic deal with WPP, the largest advertising agency in the world, and spearheaded widespread adoption of header bidding, a new technology that undermined Google’s near-monopoly on publisher advertising technology.

Google’s response to the threat from AppNexus was that of a classic monopolist. They announced that YouTube would no longer allow third-party advertising technology. This was a devastating move for AppNexus and other independent ad technology companies. YouTube was (and is) the largest ad-supported video publisher,

with more than 50% market share in most major markets. While Google claimed this decision was to improve advertiser experience, the next few years of advertiser boycotts clearly demonstrate that advertiser experience was significantly worse after this decision.

Over the next few months, Google's ad technology team went to each of our clients and told them that, regardless of how much they liked working with AppNexus, they would have to also use Google's ad technology products to continue buying YouTube. This is the definition of bundling, and we had no recourse. 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.

This is just one example of many where Google used its unfair market heft to attack AppNexus and other competitors in the internet advertising space. It's a long list: Google search data is only available in their own ad platform; they threaten publishers that they will stop running lucrative AdSense contextual ads if they switch ad platforms; they restrict integrations with their analytics and measurement tools; they use their consumer products to claim "first party" status in privacy discussions. I could go on. But the point I'm trying to make, just in this one relatively obscure part of the Google empire, is that Google acts to protect its own interests, not those of its customers or of society at large.

Eliminate the Advertising Anti-Trust Exemption

Over the past decade, Facebook and Google have successfully completed hundreds of acquisitions without any meaningful anti-trust implications, creating super-monopolies reminiscent of AT&T and Standard Oil in their respective heydays. The reason that these acquisitions have gone uncontested is that modern anti-trust enforcement uses consumer prices as the sole measure of consumer welfare to evaluate a proposed merger. Since much of the internet is

ad-supported, the direct monetary cost to the consumer is zero. In effect, we have created an advertising anti-trust exemption that has allowed ad-supported companies to buy whoever they want.

We have to close this loophole in anti-trust practice and reintroduce competition in the internet sector. I am not an anti-trust expert, but I can suggest two angles to pursue.

First, we need to remember the “no free lunch” that’s built into the advertising economic network. Consumers pay for ad-supported content with their attention and data. If a merger or combination will obfuscate this trade, it should not be allowed. For instance, I think Facebook users understand that the information on their profile will be used for advertising purposes *on Facebook*. When Facebook acquired Instagram, they gained the ability to take this Facebook profile data and use it to monetize Instagram. I think this is confusing for users (to quote my daughter when I was explaining this to her, “Facebook owns Instagram!?!?!?”)

Perhaps the answer here is, as I suggested above, to have all data be siloed in its respective service and treat intra-company transfers at arm’s length. Alternatively, we could create the concept of common carriage, and require Facebook to offer its data to any photo-sharing app with the same access and at the same price as it does to Instagram. You might say that’s a privacy issue. Yet if Facebook can update its privacy policy to add Instagram, it can update its policy to add Snapchat. There is no magic to an acquisition that somehow makes it safer to share data between two companies once one acquires the other.

Second, we need to ask regulators to look at the full value chain when they consider whether a combination is anti-competitive. On first look, perhaps YouTube seemed like an innocuous addition to the Google empire since it’s free and doesn’t directly overlap search.

This presumption that the internet is made up of disconnected markets is clearly false. We need to assume that internet giants, like any other big companies, will use their assets to maximize profit and strategic value. Data is an incredibly valuable asset. Free services that capture data are powerful assets in the information economy. Thus, it's hard to imagine how using consumer price as the sole determinant of consumer welfare makes any sense for internet companies. Free isn't an excuse to be anti-competitive.

Conclusion

As an entrepreneur, I am hesitant to ask the government to split up Facebook or Google. These are incredible companies that have done much good for consumers, employees, and communities. At the same time, we must ask ourselves whether having the internet concentrated in the hands of a few companies is good for America.

I propose three actions to ensure that consumers have choice, and thus agency, in the internet economy:

1. Create a consumer bill of data rights that lays out first principles to ensure transparency, control, and portability of data.
2. Create a regulatory entity to enforce these principles as the internet continues to evolve.
3. Close the anti-trust advertising exception and either break up the internet giants or force them to treat their component parts at arms-length.

Thank you very much for taking these issues seriously. I fully believe that with a few thoughtful actions, we can create a better internet.

ISBA PROGRAMMATIC SUPPLY CHAIN TRANSPARENCY STUDY



aop

In association with the AOP,
carried out by PwC
May 2020



PART 1
INTRODUCTION



Introduction

– ISBA



In January 2018, ISBA’s Performance and Programmatic Steering Group, representing the UK’s advertisers, posed a simple question: what does my programmatic supply chain look like and how can I assess its value in terms of working media? And it tasked ISBA with finding out the answer.

The simplicity of this perfectly reasonable question belied the complexity involved in discovering the answer. Taking learnings from the WFA’s (World Federation of Advertisers) 2014, now famous ‘Waterfall’ report, and the 2016 Programmatic: Seeing Through the Financial Fog report by the ANA (ISBA’s US equivalent), ISBA has gone the next step creating a forensic end-to-end study, from advertiser to publisher. Working in partnership with the AOP (Association of Online Publishers) whose members have provided the publisher data, and commissioning PwC to connect and audit supply and demand, this study tracks disclosed media only.

As you’ll read, PwC’s report for ISBA and its members is about far more than answering our members’ simple question – what does my programmatic supply chain look like and cost? The study took a year to set up and a further year to carry out, revealing a market ripe for fundamental reformation to make it fit for purpose. The findings in this unique, world-first industry report, delivers the evidence to involve all stakeholders – advertisers, agencies, publishers and the ad tech sector itself, to urgently collaborate openly, honestly and constructively around shaping a trading market that is transparent, fair, safe and predictable where all

interests can thrive equally. Indeed, these cross-industry discussions have already begun.

This project which has lasted far longer than could have been reasonably anticipated, is brought to you because our participating advertisers backed and funded it. However, it should be noted that the final cost of the project was a factor of many times the collective investment of our member advertisers, due to the significant challenges faced and met by PwC. On behalf of those 15 advertisers and the wider ISBA membership, I want to thank the AOP and its 12 participating members for investing their precious resources and full support to secure that end-to-end supply chain. Mostly I want to thank Sam Tomlinson and his excellent team at PwC for their absolute dedication and investment in significant resources to bring this industry-changing report to life.

A handwritten signature in black ink that reads "S. W. Chester". The signature is fluid and cursive.

Steve Chester
Director of Media, ISBA

May 2020

Introduction

– PwC



PwC's Marketing & Media Assurance team is a neutral independent party committed to delivering trust and transparency across the marketing ecosystem – in this specific case, across the programmatic supply chain.

As you will read in this report, despite advertisers and publishers being keen to share their spend and revenue data respectively, it still took many months for this to happen. This supply chain complexity seems unlikely to be consistently in the best interests of market participants, an intuition corroborated by our findings that half of advertiser spend reaches publishers and that 15% of advertiser spend – around one-third of supply chain costs – is unattributable. And it's important to realise that this study represents the most premium parts of programmatic: the highest profile advertisers, publishers, agencies and adtech. If examined, the 'long tail' would presumably further reinforce these findings.

Our two critical conclusions in response are: (i) standardisation is urgently required across a range of contractual and technology areas, to facilitate the data sharing that is a key step towards a more transparent supply chain; and (ii) all industry participants should collaborate to further investigate the unattributable costs and agree industry-wide actions to reduce them.

The promise of programmatic is the ability to target the right audiences, in the right context, at the right time. All participants need confidence that the supply chain is acting to fulfil that promise. We hope this study can be a positive catalyst for change.

We would like to express our gratitude to everyone at ISBA and AOP and to all the participating publishers, agencies, adtech and particularly the advertisers who funded this study. And I would also like to extend a huge personal thanks to the team of programmatic and data experts at PwC who delivered this project – it took a year to envisage and another year to deliver, but your perseverance was rewarded in the end.

We hope you enjoy reading this report. Please do contact us with any questions.

Best wishes,

A handwritten signature in black ink that reads "Sam Tomlinson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Sam Tomlinson
Partner, PwC
May 2020

PART 2

**EXECUTIVE
SUMMARY**

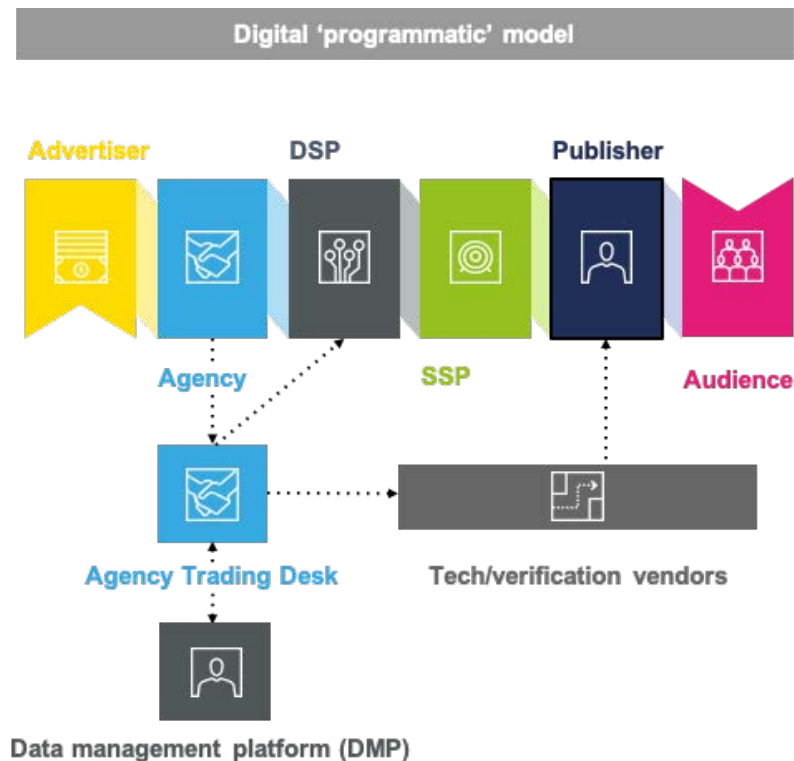


Executive summary

1. The programmatic supply chain

ISBA advertiser members were keen to understand the true nature of the ~£2bn UK programmatic market and its supply chain, in particular how much of their spend reaches publishers as revenue.

This study set out to identify each element of the supply chain, understand the services and costs at each stage, and map supply chains from start to finish using real market data from advertisers (operating disclosed programmatic models) and publishers. The intention was to provide a more transparent view of the UK programmatic supply chain, for the benefit of all participants and the industry as a whole.



2. Study participants

PwC's team of data scientists, data engineers and ad-tech specialists collected data from the study participants: 15 advertisers, 12 agencies, five DSPs, six SSPs and 12 publishers, representing approximately £0.1bn of UK programmatic ad spend and nearly two-thirds of AOP (premium publisher) digital ad revenues.

3. Study overview

Data collection ran from 1 January 2020 to 20 March 2020. From 267 million impressions served from study advertisers to study publishers, 31 million (12%) were successfully matched. The rest could not be mapped due to low data quality, which reinforces the critical conclusions from this study.

The matched impressions provide interesting insight into the supply chain, including the proportion of advertiser spend reaching publishers as 'working media', and an 'unknown delta' of unattributable costs.

31m
Matched impressions

50+
Companies involved

290
Unique supply chains matched

← **15 months study duration** →

2.2bn
Lines of data reviewed

267m
Total impressions observed

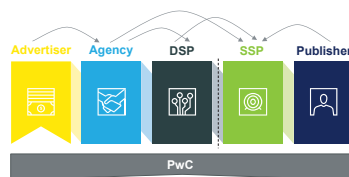
Executive summary

4. Challenges

Challenges with contracts, permissioning, data and technology meant it took more than a year to obtain the required data. The key challenges are summarised below. A critical conclusion of this study is the need for industry consistency around data sharing and data formatting.

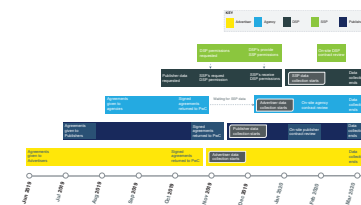
Chicken and egg permissioning

There is a lack of clarity and understanding over how parties share data and who needs to permission what, with up to four separate parties requested to confirm their approval over one data set for one part of one supply chain.



Access delays

Some supply chain intermediaries were not clear about what was required for permissions, leading to significant delays in data access.



Complex supply chain

The 15 advertisers had nearly 300 distinct supply chains to reach 12 publishers. This complexity contributes to a markedly opaque supply chain.



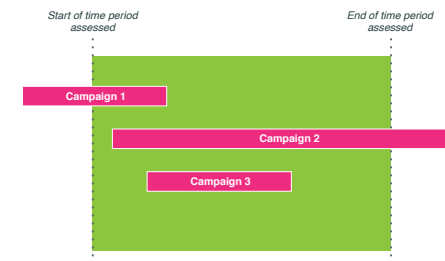
Data formatting and fidelity

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.

Date formats	Names for revenue	Monetary formats
1581900137000	AdeCPM	£0.01
1575587858110006	EstimatedBackfillRevenue	\$0.000123
2020-01-14-20:44:29	net_revenue	\$0.0000123024553556555
2019-11-11	trackerRevenue	- £0.0000999228111
11.01.20	Seller_revenue_CPM	\$0.0219066

Inflexible data retrieval

The data captured from a DSP for an impression is not equally captured on the sell side. Impression matching cannot easily be performed at campaign level due to missing information in datasets.

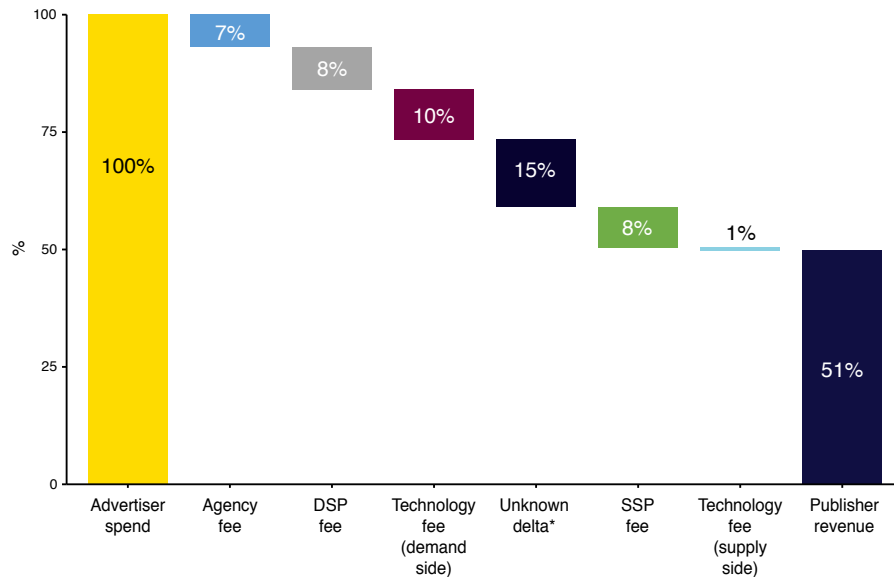


Executive summary

5. Supply chain findings

The industry waterfall: analysing advertiser spend

In this study, publishers received half of advertiser spend. 15% of advertiser spend – the unknown delta, representing around one-third of supply chain costs – could not be attributed.



This study cannot say with any certainty what the unknown delta represents. It could reflect a combination of: limitations in data sets, necessitating occasional estimations; DSP or SSP fees that aren't visible in the study data; post-auction bid shading; post-auction financing arrangements or other trading deals; foreign exchange translations; inventory reselling between tech vendors; or other unknown factors. A critical conclusion of this study is the need for industry collaboration to further investigate the unknown delta.

Agency fees: varying services and fee models

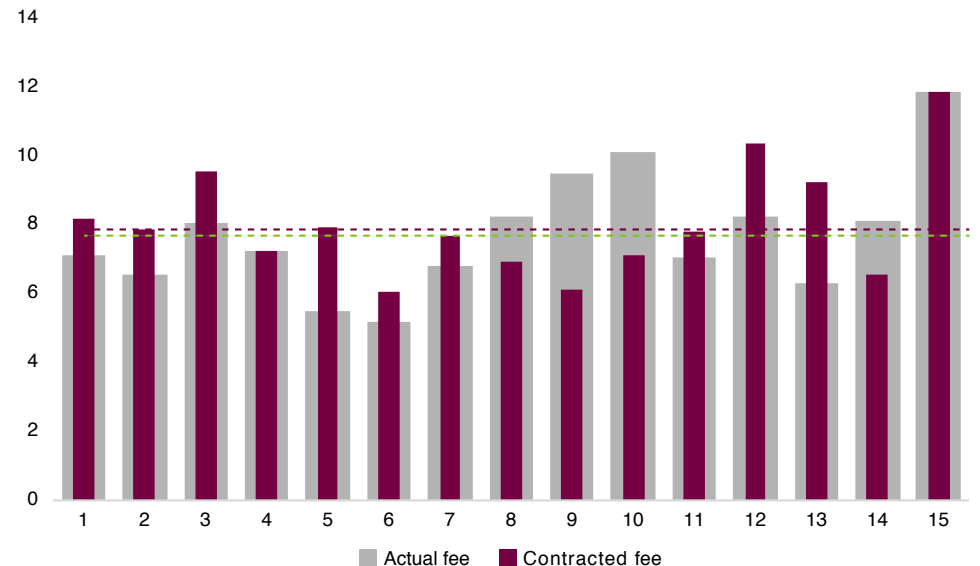
The various agency services and remuneration models were converted to estimated percentage equivalents to represent the cost of agency services in the waterfall analysis:

- Fixed fee for all services rendered
- Fixed fee for programmatic
- Commission
- Agency and adtech aggregated fee

These models prevent direct cost comparisons of agencies.

DSP fees: fees in the data can vary from contracted rates

DSP actual fees and contracts both averaged ~8%, but with individual variations. (These variations are at an impression level; they might be corrected via reconciliations.)

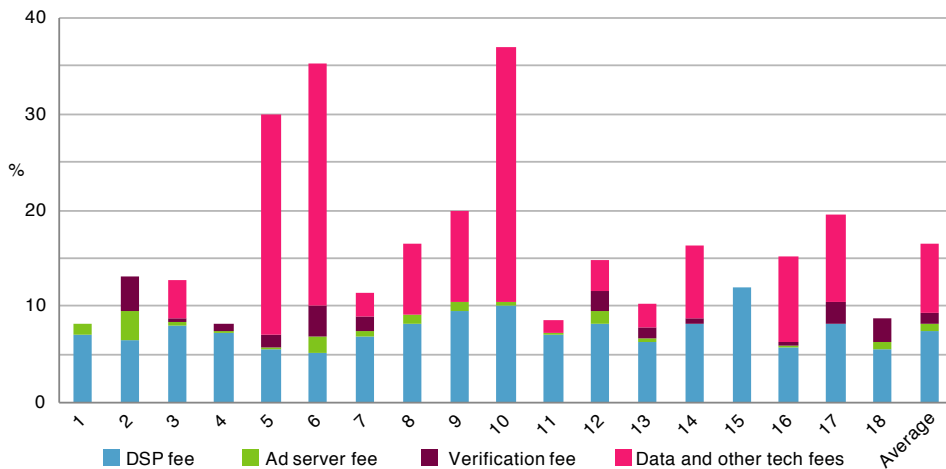


Executive summary

5. Supply chain findings

Tech fees (demand side): ad server, verification and data

Demand side tech fees (mainly ad serving, verification tools and data) averaged 10% of advertiser spend. DSP and technology fees were then analysed in aggregate, given the overlapping services, with an average aggregate cost of 18%.

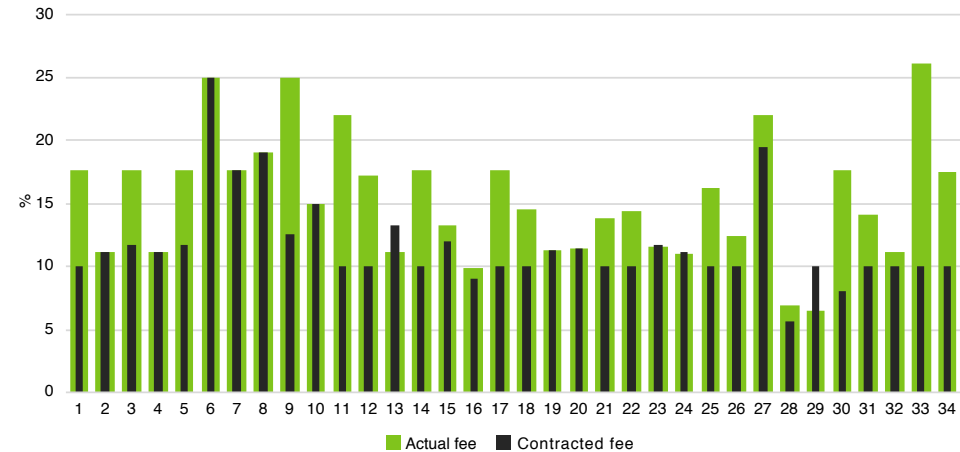


Tech fees (supply side): Exchange Bidding (EB)

EB fees of 5% were applied against publisher revenue, representing an average 1% of advertiser spend. Some participants were seemingly unaware of EB fees being applied.

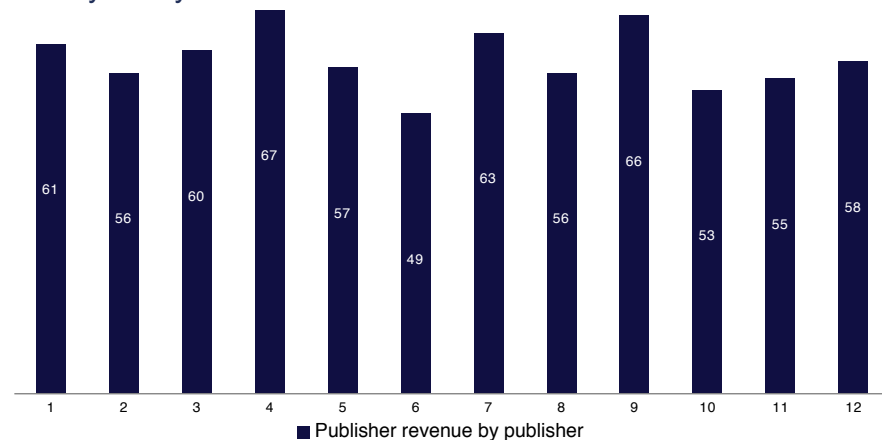
SSP fees: fees in the data can vary from contracted rates

SSP fees on average within the study data appear to be ~14% of publisher revenues (equivalent to ~8% of advertiser spend), compared to underlying contracts showing ~12%. (These variations are at an impression level; they might be corrected via reconciliations.)



Publisher revenue: ranged from 49% to 67% of ad spend

Publisher revenues in our study ranged from 49% to 67% of advertiser spend for each individual publisher. When giving equal weight to each supply chain, the average was 51%. Publisher revenues were also analysed by advertiser and SSP.

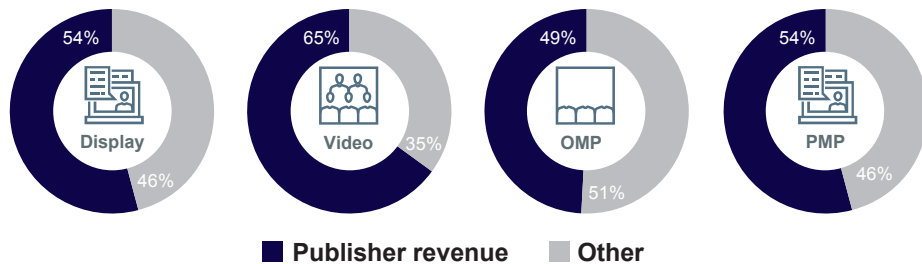


Executive summary

5. Supply chain findings

Publisher revenue: display vs video and OMP vs PMP

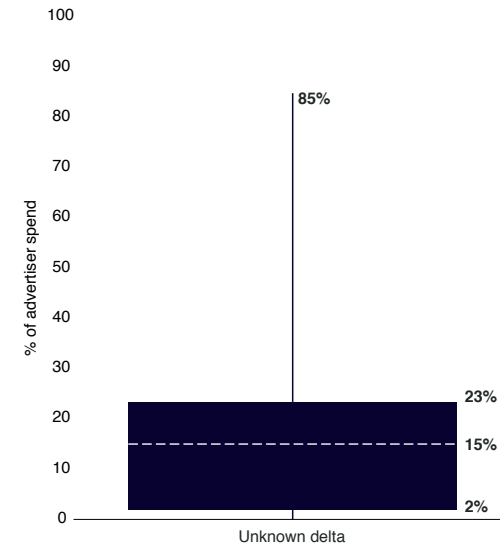
For identifiable impressions (~60% of the 31 million matched), a greater proportion of advertiser video spend (65%) reaches publishers than display (54%) and the same is true of private marketplace spend (PMP, 54%) vs open marketplace (OMP, 49%). Unidentifiable impressions (i.e. not labelled by format or marketplace) generally had a smaller proportion of advertiser spend reaching publishers, lowering the overall study average.



The 'unknown delta': 15% of advertiser spend

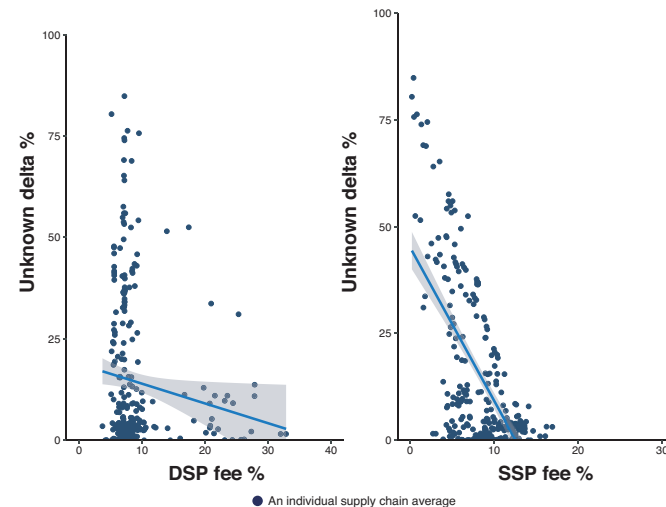
In our sample of 31 million matched impressions, the winning bid in the DSP often does not match the gross revenue recorded in the SSP. This 'unknown delta' averaged 15% of advertiser spend. Our study shows that even in a 'disclosed' programmatic model, around one-third of supply chain costs remain undisclosed.

The unknown delta averaged 15% of advertiser spend, ranging from 0% to 86%, with the majority from 2% to 23%.



The 'unknown delta': more investigation is needed

Data analysis shows a negative inverse correlation with both DSP and SSP fees, but does not provide insight into underlying causes or where they arise. Potential contributory factors are set out earlier, under the waterfall chart.

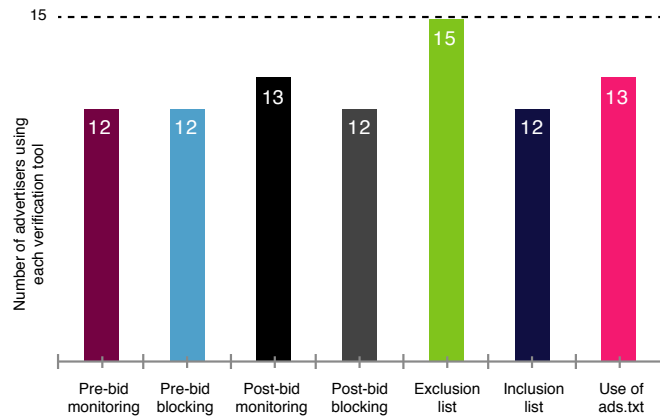


Executive summary

6. Supply chain governance

Verification tools: used widely but inconsistently

The most commonly used tools were post-bid monitoring and exclusion lists. Note: this study is mainly focused on matched impressions, so does not address ad spend lost to fraud etc.



Websites: advertisers are using a huge number

Participating advertisers appeared on an average of 40,524 websites, most being non-premium. Only 19% of impressions were served to study publishers.

Data maturity assessment: UK programmatic landscape

This was based on the PwC data maturity assessment tool.



7. Recommendations

Key recommendations from this study were determined for advertisers, publishers and the industry as a whole.

The two critical conclusions are:

- **Standardisation is urgently required across a range of contractual and technology areas, to facilitate data sharing and drive transparency; and**
- **All industry participants should collaborate to further investigate the unattributable costs and agree industry-wide actions to reduce them.**

Final thoughts

All market participants must contribute to industry evolution. This includes: a shared understanding and application of 'transparency'; contractual arrangements with standardised definitions; clear and consistent protocols for sharing data; careful monitoring of log level reports; supporting industry initiatives to investigate any unattributable costs; and implementing robust governance and compliance programmes.

We hope this study can be a positive catalyst for change.



PART 3
**STUDY
PARTICIPANTS**

Study participants

Advertisers



Through extensive collaboration with ISBA, 15 advertisers stepped forward to participate in the study and allowed their supply chains to be examined. They represent a cross-section of the marketplace across most major categories. With a combined annual UK media spend of over £800m, of which ~10% is programmatic, this provides a robust representation of major UK (and global) advertisers. These 15 advertisers funded the study through a fixed flat fee paid via ISBA. In return, each advertiser will receive an individual report and a personal debrief on their specific supply chain. The 15 advertisers are:



Study participants

Publishers



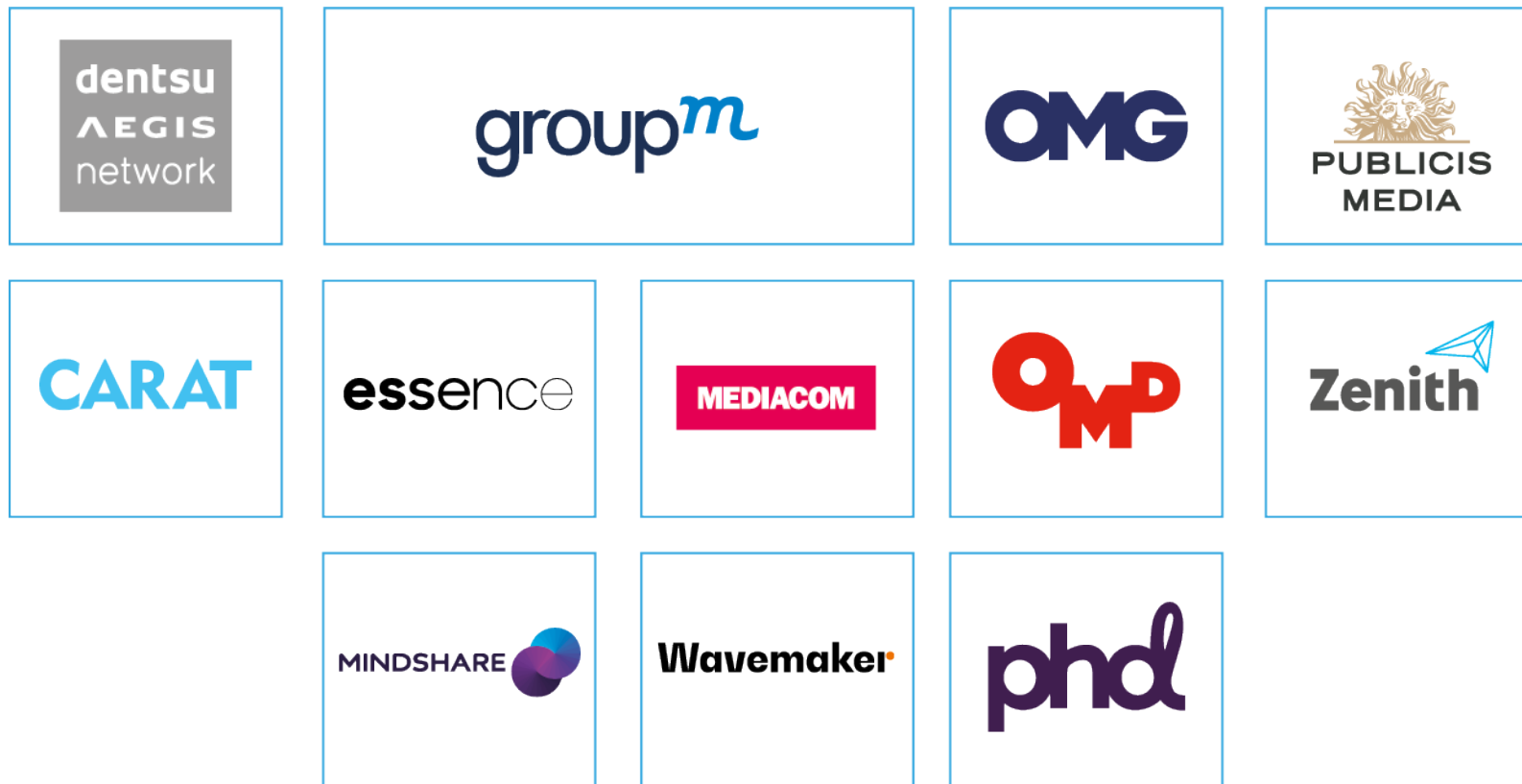
Through extensive collaboration with AOP, 12 publishers volunteered to participate in the study by sharing revenues received from their main SSP partners. These 12 participants are some of the highest-profile publishers from across the 'news' and 'magazine' sectors, representing nearly two-thirds of AOP (premium publisher) digital ad revenues. They took part in the study at no cost by agreeing to share data, and will each receive a copy of this report and a personal debrief. The 12 publishers and some of their key titles are:

Study participants

Advertiser agency partners

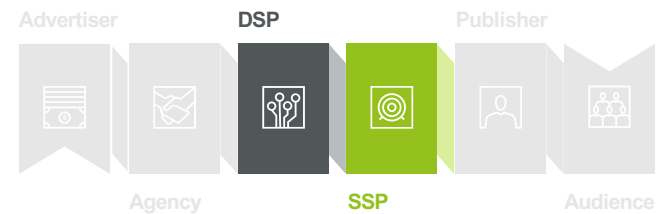


The 15 participating advertisers were represented by eight agencies, which in turn represent four of the six largest global holding companies. The agencies, and their trade body the IPA, entered into the study in a spirit of collaboration and shared spend data on behalf of their advertiser clients. Each of these agencies will receive a copy of this report. The eight agencies are:

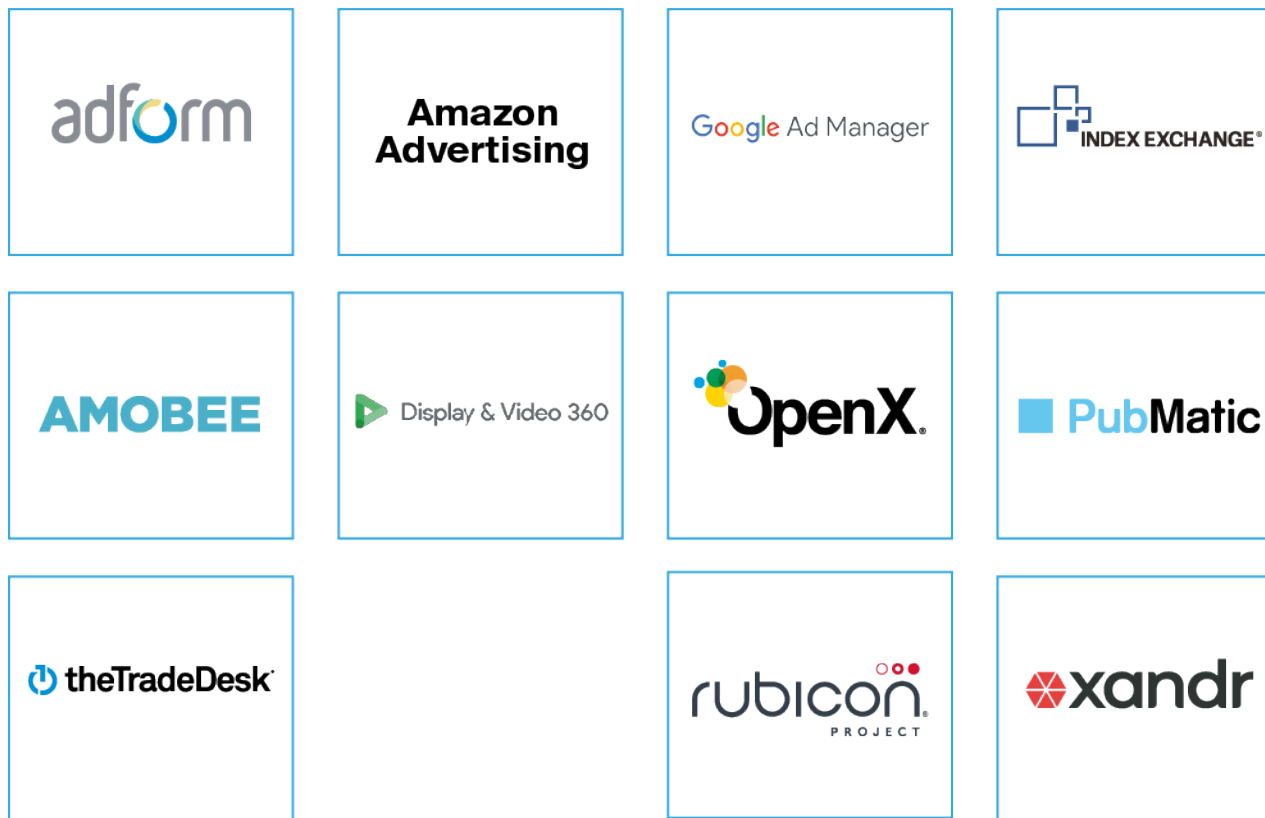


Study participants

Tech vendors



The demand side platforms (DSPs) and supply side platforms (SSPs) are the primary tech vendors used by the participating advertisers and publishers, representing approximately 80% of all impressions served by these publishers for these advertisers. These SSPs, with permission requested from DSPs in some cases, agreed to share publisher data with PwC. Two of the SSPs had smaller data sets due to delays in data permissions and provisioning. Each tech vendor will receive a copy of this report. (DSPs were not always active participants – sometimes, advertisers or their agencies simply extracted the relevant data for sharing with PwC).



Summary of study participants



Advertiser

Arla
British Airways
BT
Disney
GSK
HSBC
Lloyds Bank
Nestle
PepsiCo
RBS
Sainsburys
Shell
Tesco
Unilever
Vodafone

Agency

Carat Dentsu Aegis
Essence WPP
Mediacom WPP
Mindshare WPP
Wavemaker WPP
OMD UK Omnicom
PHD Omnicom
Zenith Media Publicis Group

DSP

Adform
Amazon
Amobee
DV360
TheTradeDesk

SSP

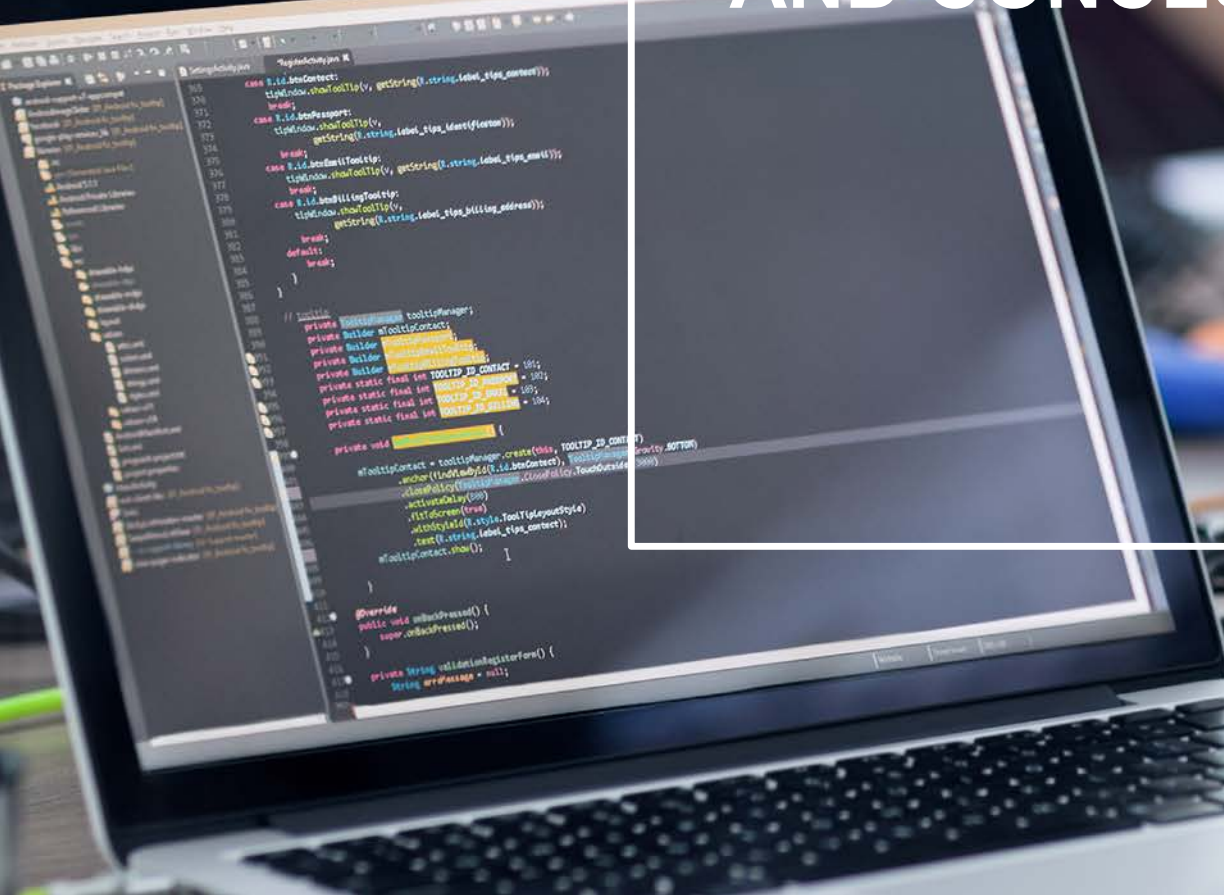
Ad Manager
Index Exchange
OpenX
PubMatic
Rubicon

Publisher

Autotrader
Bauer Media Group
Dennis
ESI
Haymarket
Immediate Media
Mail Metro Media
News UK
Rightmove
Telegraph
The Guardian
TI Media

PART 4

RECOMMENDATIONS AND CONCLUSIONS



RECOMMENDATIONS

Critical conclusions

Critical insight

Contractual T&Cs across all study participants were inconsistent, as were their interpretations. Similarly, each study participant had different data definitions, taxonomies and signifiers, retention policies, etc. These challenges with data access and data format caused this study to take 9 months longer than intended.

The industry must make it simpler for participants to access and share their own data (or their client's data), in a format that can be readily analysed.

The percentage of advertiser spend that reached publishers ("working media") averaged 51%.

The unknown delta of 15% represents around one-third of supply chain costs. Even in disclosed programmatic models, this amount remains unattributable.

The unknown delta could reflect a combination of: limitations in data sets, necessitating occasional estimations; DSP or SSP fees that aren't visible in the study data; post-auction bid shading; post-auction financing arrangements or other trading deals; foreign exchange translations; inventory reselling between tech vendors; or other unknown factors.

Critical implication / recommendation

Industry bodies and participants should agree standardised T&Cs for data access and sharing, to be implemented in all contracts along the supply chain.

They should also ensure consistent data taxonomies, definitions, retention, seats and seat IDs, etc. are used across all supply chain participants wherever possible.

The industry needs to mature urgently to facilitate the data sharing that is a key step towards a more transparent supply chain.

Unattributable costs representing around one-third of supply chain costs need investigation and resolution. Concerted action is required by all industry participants – advertisers, agencies, adtech, publishers and possibly regulators – to minimise these costs, in order to drive up the proportion of advertiser spend that reaches publishers.

Participants, trade bodies and regulators should work together to better understand the unknown delta, with the aim of uncovering causes and agreeing industry-wide actions to reduce them.

Industry participants should also engage with industry initiatives such as *sellers.json* and *OpenRTB SupplyChain object* (both driven by IAB) that seek to limit unauthorised reselling.

RECOMMENDATIONS

For advertisers

Insight	Implication / Recommendation
<p>The 'unknown delta' of unattributed spend averaged 15% in this study. This unknown delta represents around one-third of supply chain costs.</p> <p>Even in disclosed programmatic models, this amount remains unattributable.</p>	<p>Advertisers and agencies should seek to better understand the unknown delta; to engage with industry initiatives such as <i>sellers.json</i> and <i>OpenRTB SupplyChain object</i> (both driven by IAB) that seek to limit unauthorised reselling; and to consider maximising PMP (vs OMP) volumes where possible.</p>
<p>The percentage of advertiser spend that reached publishers (“working media”) averaged 51%.</p>	<p>Advertisers should engage carefully with agencies to understand the steps their agency is taking on their behalf to maximise the proportion of their spend that reaches publishers.</p>
<p>Access to relevant buy-side data from agencies and DSPs was not always readily available to advertisers.</p>	<p>Advertisers should insist their agency has a separate seat for each client, and that log level data be readily available. Advertisers could also consider operational changes such as direct contractual relationships with DSPs and strengthening (or developing) direct publisher relationships.</p>
<p>Reporting on programmatic campaigns by agencies and monitoring practices by advertisers appear to be inconsistent, which can hinder analysis of campaign delivery and performance.</p>	<p>Advertisers perform ongoing monitoring of volume and placement of programmatic ads, including e.g. type (display / video), marketplace (PMP vs OMP), volume and nature of websites, country URLs.</p>
<p>All advertisers were using some form of verification tools (for ad serving, fraud, viewability, brand safety) but many were not using all of them. This creates potential exposures in each of these critical areas.</p>	<p>Advertisers should ask their agencies which tools are being applied, to what proportion of impressions, and how (to understand their granular implementation); and should monitor outputs on a regular basis.</p>

RECOMMENDATIONS

For publishers

Insight	Implication / Recommendation
The 'unknown delta' of unattributed spend averaged 15% in this study. This unknown delta represents nearly one-third of all supply chain costs.	Publishers should seek to better understand the unknown delta; to engage with industry initiatives such as <i>sellers.json</i> and <i>OpenRTB SupplyChain object</i> (both driven by IAB) that attempt to limit unauthorised reselling; and to consider maximising PMP (vs OMP) volumes where possible.
Publisher contracts with SSPs were frequently aged, so not reflecting recent technological innovations (e.g. Exchange Bidding) or current operational practices (e.g. changing auction mechanics).	Review and update SSP contracts on a regular basis (e.g. annually, or at least every other year).
Publisher / SSP contracts sometimes used undefined or unclear or inconsistent terms (e.g. gross vs net revenue), and/or were not fully understood by the publisher team with primary responsibility for the SSP relationship.	Ensure all SSP contracts are clearly set out, with defined terms used consistently, and are well understood by the team leading the SSP relationship.
Monitoring practices at publishers were inconsistent. Monitoring of impression volumes and revenues, ideally at log levels, would reduce discrepancies and help optimise supply chains.	Publishers should monitor impression volumes (from SSP and ad-server) and revenues, all at log level where possible.
Publishers are rarely exercising their right to audit their SSPs. Regular audits would ensure SSPs fulfil their contractual commitments for both commercial terms and use of publisher inventory and audience data.	Exercise the right to audit SSPs, at least every other year for each SSP.

RECOMMENDATIONS

For the industry

Insight	Implication / Recommendation
The 'unknown delta' of unattributed spend averaged 15% in this study. This unknown delta represents nearly one-third of supply chain costs.	All industry participants should seek to better understand the unknown delta; to engage with industry initiatives such as <i>sellers.json</i> and <i>OpenRTB SupplyChain object</i> (both driven by IAB) that attempt to limit unauthorised reselling; and encourage the use of high-quality PMPs where possible.
Contractual T&Cs across all study participants were inconsistent, as were their interpretations. The industry must make it simpler for participants (e.g. advertisers, agencies, publishers) to access and share their data or their client's data.	Industry bodies and participants should agree standardised T&Cs for data access and sharing, to be implemented in all contracts along the supply chain.
Each study participant had different data definitions, taxonomies, signifiers, data retention policies, etc. all rendering data-linking across the supply chain hugely complex.	Industry bodies and participants should ensure consistent data definitions, taxonomies, retention, seats and seat IDs, etc. are used across all supply chain participants, wherever possible.
Transparency is inconsistently applied as a concept across the industry and by stakeholders. Without a consistent standard it is difficult to compare actors and incentivise good behaviour.	Standardise the definition of 'transparency' for all programmatic supply chain participants.
Inconsistent contracts, T&Cs, data taxonomies, reporting functionality, and concepts of 'transparency' all make it extremely difficult for any individual party to get a clear picture of their own supply chain.	Industry bodies and participants should support efforts to improve standardisation and data sharing, to facilitate robust independent supply chain verification.

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