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Competition in Digital Advertising Markets – Note by the United Kingdom

30 November 2020

This document reproduces a written contribution from the United Kingdom submitted for Item 1 of the 70th OECD Working Party 2 meeting on 30 November 2020.

More documents related to this discussion can be found at
http://www.oecd.org/daf/competition/competition-in-digital-advertising-markets.htm

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1. In July 2020, the CMA published the final report on its online platforms and digital advertising market study.[1] Our submission in response to the issued identified by the OECD Secretariat is mainly based on the findings as presented in the Final Report. We note that the Market Study looked in some depth at digital advertising markets, assessing whether a lack of transparency, conflicts of interest, and the leveraging of market power undermine competition in digital advertising. In addition, we addressed two related questions concerning competition in the consumer-facing markets, which platforms use to attract use attention and collect user data, two key inputs into serving targeted digital advertising. These questions were (i) to what extend Google and Facebook have market power in their user facing services, search and social media respectively, and the sources of this market power and (ii) whether consumers have adequate control over the use of their data by online platforms. We found that these issues are strongly interconnected and so will include reference to these issues where appropriate in our submission.
2. We address the issues in the order identified by the OECD Secretariat in its call for contributions.

1. How does the digital advertising supply chain work?

3. We begin this section by highlighting the importance of digital advertising in the UK and continue by laying out the forms of digital advertising. We then set out how digital advertising is sold and make brief reference to vertical integration as well as the importance of access to consumer and other data at the end of this section.

1.1. Importance of digital advertising in the UK

4. Digital advertising is the largest and fastest growing segment in the UK advertising sector accounting for 62% of total advertising spend, up from 25% in 2010.[2] In 2019, £14 billion were spend on digital advertising in the UK. This is made up of £7.3 billion spend on search advertising and £5.5 spend on display advertising.
5. The digital advertising market in the UK is highly concentrated with the main firms, Google and Facebook, collectively accruing around 80% of all search and display advertising. Google makes up 93% of the UK search advertising market, while Facebook which makes up over 50% of the display advertising market.[3]

1.2. Forms of digital advertising

6. **Search advertising** is where an advertiser pays for its advert to appear next to the results from a consumer's search on an internet search engine. The selection and targeting of these adverts is based primarily on keywords entered by the user. While the advert shown to a consumer may also be influenced by some limited data about the consumer such as their

[1] Hereinafter referred to as **Final Report** and **Market Study** respectively.

[2] Final Report paragraph 2.40.

[3] See Chapter 2 and 5 of the Final Report for further information on digital advertising markets in the UK.

location at the time, personal data plays a limited role in selecting the advert compared to targeted/behavioural advertising in the open display market.

7. Advertisers will pay for their adverts to be displayed when consumers enter particular keywords or phrases, with payment typically made if the consumer clicks on the advert. Advertisers or their agencies generally buy direct from search providers using the providers' self-service online sales interfaces, such as Google Ads. Search advertising is aimed at driving consumers to take a particular action such as clicking a link. It is therefore used for direct response campaigns and is normally paid for on a cost-per-click (CPC) basis.

8. In **display advertising** advertisers place ads on websites or apps in a variety of formats. We consider the display advertising sector to be segmented into two channels:

    1. **owned and operated platforms** where primarily the large social media platforms, sell their own advertising inventory directly to advertisers or media agencies through self-service interfaces[4] and

    2. the **open display market** where a wide range of publishers sell their inventory to a wide range of advertisers through a complex chain of intermediaries that run auctions on behalf of the publishers and advertisers. Google owns the largest intermediaries at each level of this chain.

9. Almost all display advertising is sold programmatically (ie ad selection, and the pricing and delivery of ads, are automated by computers using complex algorithms),[5] providing an opportunity for businesses and other organisations to target their adverts to particular audiences based on detailed consumer profiles. Display advertising is associated with raising brand awareness and shifting brand perceptions and is mainly sold on the basis of how many times it is viewed, typically measured as cost per thousand impressions (CPM).

10. While we did not seek to undertake a formal market definition exercise as part of the Market Study, we sought advertisers' views as to the substitutability of various forms of advertising. Based on these findings we consider there to be limited substitutability between traditional advertising and digital advertising. Within digital advertising we found that separate substantive assessments of competition in search and display advertising are warranted. This was because our evidence showed that search and display advertising are not substitutable as they perform distinct roles within the customer purchase journey. Search is primarily intent-based advertising designed to provide immediate answers to consumers who have already shown interest in buying the product ('in-market consumers'), whereas display is suitable for raising brand awareness and reaching new audiences that might not yet have shown interest ('out-of-market consumers'). We also found that most advertisers set budgets for search and display advertising independently and do not allocate them interchangeably. We note, however, that we saw some evidence that display advertising, particularly on Facebook, is increasingly being used for targeting in-market conversions.[6]

[4] Examples of this are advertiser purchasing inventory directly through Facebook Ads Manager or Snapchat Ads Manager.

[5] Some display advertising continues to be made through traditional channels (ie involving human interaction) as direct deals between publisher and advertisers/their media agencies.

[6] For substitutability between advertising media please see final report at paragraph 5.22 et seq.

1.3. The sale of digital adverting and the supply chain

11. Digital advertising, both search and open display, is characterised by the real-time nature of the technology involved in showing an advert and the associated sales process. This means that the decision on which advert to show when a user opens a web page or submits a search query is made in real time and inventory space is sold programmatically.[7]

12. For the sale of **search advertising**, search engines use second-price auctions to set prices for advertising inventory, where the price paid by the advertiser that wins the auction (and so the right to display the link in relevant search results) is determined in part by the value of the second-highest bid. A key feature of the auctions used in search advertising is that outcomes are also determined by the relevance to the search query of the underlying content of the advertiser website to which the advertising links. Search engines assess relevance directly and use this assessment to weight bids from different advertisers on a real-time, in-auction basis. Weightings have a direct bearing on whether the advertiser's link is displayed in the search engine's results and, if so, that what price the advert is displayed. Higher quality will mean the search engine places greater weight on the advertiser's bid, with the result that its advertising is more likely to appear in search results and at a lower cost-per-click. The price paid by the winning advertiser is the amount required to match the second-highest bid, given the relative quality weighting of the two bids, or the reserve price if there is no second-highest bid that is eligible to be shown.

13. In **display advertising**, platforms with sufficient scale run their own self-service interfaces for programmatic trading (owned and operated platforms), often selling their own advertising inventory based on the use of quality-adjusted second-price auctions. The self-service interfaces allow an advertiser to set its bidding strategies directly, with the platform effectively running the process to decide which advert to show, managing the physical delivery of the bid and providing verification and attribution data back to the advertiser.

14. In the open display segment, a range of intermediaries, the so called adtech stack, allows for advertisers to reach consumers on publishers' websites outside the owned and operated platforms. We set out the main participants in the adtech stack first before describing a typical real time transaction.

1.3.1. Main participants in an open display advertising transaction

15. On the demand side, acting on behalf of the advertiser or their media agencies, the main participants include:

    - Advertiser ad servers – used by advertisers and media agencies to store the ads, deliver them to publishers, and keep track of this activity.
    - Demand Side Platforms (DSPs) – provide a platform that allows advertisers and media agencies to buy advertising inventory from many sources. DSPs bid on impressions based on the buyer's objectives and on data about the final user.

16. On the supply/ publisher side the main participants include:

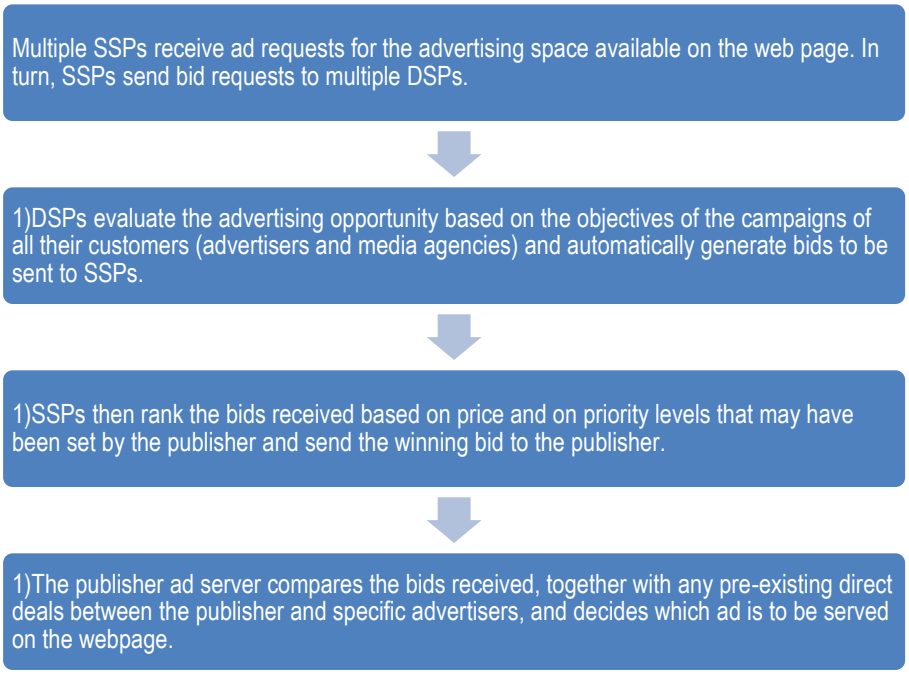
    - Supply Side Platforms (SSPs) – provide the technology to automate the sale of digital inventory. They allow real-time auctions by connecting to multiple DSPs, collecting bids from them, and performing the function of exchanges. They can also facilitate more direct deals between publishers and advertisers.

[7] In some cases, for example when an advertiser has agreed a direct deal with a publisher, the decision on which advert to show may be determined before the web page is accessed and the advertising space is sold at a fixed price

- Publisher ad servers – manage publishers' inventory and are responsible for the decision logic underlying the final choice of which ad to serve, based on the bids received from different SSPs and the direct deals agreed between the publisher and advertisers.

17. In addition to these main participants, additional parties are active, providing data management and data analytics services.

18. In a typical real-time transaction, when a user opens a webpage (or uses an app), in general, the following automated process is put in motion through which:[8]

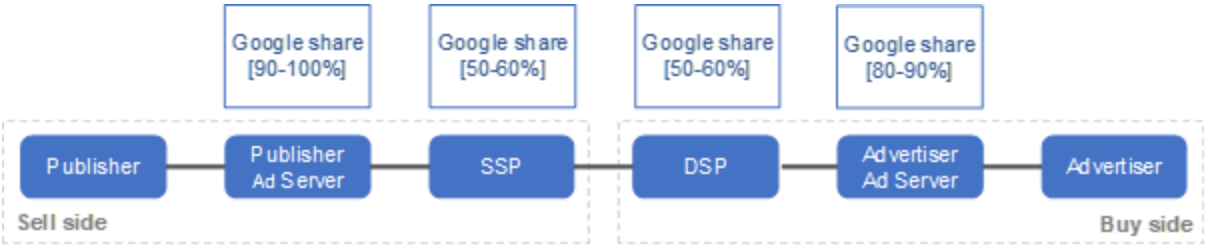


1.3.2. Vertical integration

19. We found that there has been an increasing trend towards vertical integration, with providers fulfilling more than one function within the advertising intermediation chain. Google is the most obvious example, but several other providers are also vertically integrated across different parts of the chain. Google has the strongest position at each level of the value chain, particularly in publisher ad serving (where it accounts for [more than 90]% of display adverts served in the UK). While there appears to be relatively stronger competition at the DSP and SSP level, Google still has significant shares in these markets ([50-60]% of the value of ads purchased through DSPs, and [50-60]% of the value of ads sold across SSPs and ad networks). We address our findings in relation to this vertical integration in our response to the following question.

[8] For additional detail on the transaction processes and its development see Appendix M to the Final Report.

Figure 1. Google's roles in advertising intermediation



Source: CMA: We include Google AdX, Google Ad Sense and Google AdMob in our definition of SSPs and Google DV360 and Google Ads in our definition of DSPs.

1.4. Importance of access to data

20. Data has a key role in both search advertising and display advertising as it is an essential input used to provided targeted advertising to consumers and attribution services to advertisers. However, while large datasets are useful for both search and display advertising, there are important differences as to the type of data required for each.

21. Broadly speaking there are two groups of targeted advertising: contextual advertising and personalised advertising. Contextual advertising requires relatively little data about consumers, whereas personalised advertising uses very specific user data to target advertising to each individual, by combining data collected over time from a variety of sources into profiles about consumers. In general, based on what we heard during the Market Study, personalised advertising is more important in display than in search advertising. This is because in search advertising, the most valuable data for selecting which ads to show is the search query itself, so that contextual advertising performs very well without much need for additional consumer data.[9] To ensure that the search results are relevant to the query we found that access to click and query data is important, as this allows the search engine to better train its algorithms improving its relevance.

22. In contrast, personalisation is an important aspect of targeting display advertising. User data provides targeting capabilities which allow advertisers to retarget their current customers and to target potential new customers. In these instances, detailed data on consumers' demographics, interests, preferences, and behaviours is valuable as it allows for profiling consumers, predicting consumers' potential response to advertising and tailoring advertising messages. We therefore found that access to large volumes of user data gives platforms a competitive advantage in the targeting of display advertising. Both Google and Facebook have significant advantages in targeting advertising as they can collect large datasets from the high number of consumers that are both logged-in and not logged-in onto their array of services. In addition, both have extensive access to relevant data on third-party sites and apps which is either actively shared by third-parties or is collected from these third parties through technology (such as for example analytics tools, 'like' or 'share' buttons, pixel tags and cookies), sign-in functionality or advertising services provided to publisher sites.

[9] Appendix F to our Final Report references an experiment conducted by Google shows that the user's search query is essentially what drives Google's targeting together with information about the rough location of the user. This experiment shows that the importance of other data for targeting in search is marginal. By disabling the use of demographics, in market and affinity and remarketing audiences monetisation decreased by [0-5]%, [0-5]% and [0-5]% respectively compared to the control group.

23. In addition to targeting, consumer data is also important for attribution (tracking what action consumers take after being exposed to the advert). Here, consumer data is likely to be important to both search and display advertising.

24. Both Google and Facebook have a competitive advantage as they can carry out attribution accurately for campaigns that advertisers run on their own 'walled garden' platforms. This is supplemented by Google and Facebook's tracking solutions that are widely distributed across many other websites. Rival platforms such as Microsoft and Amazon have access to some detailed high-quality data about consumers and to other types of data, but this does not extend widely to the rest of the internet. This more limited access to data in terms of quantity and/or quality of analytics data on Google and Facebook's properties constitutes a barrier to entry and expansion (although the extent to which may vary by sector) for smaller rivals in the provision of personalised advertising. In particular, lack of access inhibits independent providers of attribution services, and it could make it more difficult for advertisers to compare the relative performance of ads on Google and Facebook against ads on other websites and apps. Restrictions on third-party access to granular analytics data on their respective properties give Google and Facebook a competitive advantage.

2. Economic framework

25. It is worth noting that the scope of market studies under UK law is wider than that of an antitrust investigation. The regime requires us to consider the extent to which issues in UK markets have **effects adverse to the interests of consumers,** and if so, to assess how these could be addressed**.** Market studies therefore involve holistic and flexible assessments of how well markets are working, typically covering potential concerns on the supply and demand side of markets, and broader factors such as the existing regulatory framework. They do not seek to establish whether competition or consumer laws have been broken.

26. Online platforms typically seek to attract consumers by offering their core services for free. Once they have attracted a critical mass of consumers, they seek to make money from business users on another side of the platform. For search engines and social media services, monetisation comes predominantly through selling inventory to advertisers.[10] Google and Facebook are by far the largest two companies operating with this business model – we therefore focused heavily on these two companies throughout our Market Study.

27. The value of the platform to advertisers depends on two key factors. First, it is essential that the platform captures enough **consumer attention**. The more of consumers' attention that platforms can capture, whether that is through increased reach or keeping consumers online for longer periods, the more attractive the platform's inventory is to advertisers. (More consumer attention also means that the platform will have more inventory to sell.) Second, in addition to consumer attention, the platform will need **consumer data** to increase its value to advertisers. If the platform understands the wants and needs of specific consumers at any point in time and can provide this data to the advertiser, they can target adverts towards those individuals that they suspect are most likely to make a purchase. This targeting – whether it is based on contextual information such as the subject of a web page, or on personal data such as the individual's age or recent purchases – can result in a higher return on investment for advertisers, and a willingness to pay higher prices. Similarly, advertisers are more likely to be willing to pay high prices in the future if they are given

[10] In an online setting, inventory is essentially empty space on a web page or mobile app, which can be filled with text (including links to other websites), images, and videos.

evidence that consumers exposed to adverts on a platform went on to make a purchase. Platforms are therefore rewarded by advertisers for having extensive and up-to-date knowledge of their consumers' characteristics, preferences and behaviour. The key input to this knowledge is data.

28. Given the need for both consumer attention and consumer data to drive value for advertisers, the ability to exploit market power on the advertiser side is strongly related to the existence of market power on the user side.

29. Because of this business model and its linkage between user and advertiser side, we consider it important to analyse both sides of the platform market when assessing competition. In our Market Study, we looked at the search and social media services platforms provide to consumers, as well as the services these platforms provide to advertisers.

30. Our aim was to establish the extent to which Google and Facebook have market power on either side of the market. In doing so, we looked at substitutability between services and the existence of barriers to entry and expansion with a view to establishing the degree to which the platforms' competitive behaviour was constrained by other providers.

31. We sought to provide market shares for both the consumer side of platforms businesses as well as the advertising side and took different approaches depending on service. Given the 'zero-price' nature of the services offered to consumers by search engine and social media platforms we could not calculate shares of supply based on providers' direct revenues from users. For search and social media, we therefore considered a variety of measures such as number of individual searches entered into a search engine, user time spent and number of unique visitors. On the advertising side, shares of advertising expenditure and of revenue were calculated. Looking at the ad tech stack we calculated shares looking at number of ad impressions served and/or value of ads sold.

32. We identified high barriers to entry and expansion as well as systemic market failures as sources of market power. We provide detail on the sources of market power under the next heading.

3. Competition

33. We found that because of their scale and unique position Google and Facebook have market power in search and display advertising, respectively, earning significant revenues. The main sources of market power we identified are in the consumer-facing markets, where we identified a range of barriers to entry and expansion, insulating Google and Facebook from effective competition and making it very difficult for platforms offering innovative new services to enter and compete. Lack of competition in digital advertising can result in substantial detriment to consumers, through increasing the price of goods and services across the economy, and through undermining the sustainability of news media.

34. Google has significant market power in search and search advertising, accounting for over 90% of searches and search advertising revenues in the UK for at least the last ten years. Google's UK search revenues grew from £2.1 billion in 2010 to £6.8 billion in 2019, reflecting a compound annual growth rate of around 14%. Our in-depth analysis of Google and Bing's search prices suggest that Google's prices are 30-40% higher than Bing's on desktop and mobile when comparing like-for-like search terms. We found that the profitability of Google has been well above what is required to reward investors with a fair return for many years. We estimated that in 2018 Google's return on capital employed from search was significantly higher than 40% and thus far in excess of its cost of capital. In a

more competitive market, we would expect these excess profits to be shared more freely with consumers.

35. In Facebook has significant market power **in social media and display advertising**. Facebook (including Instagram and WhatsApp) reaches over 85% of UK internet users and accounts for around 75% of time spent on social media platforms It accounts for over half of display advertising revenues and is seen as a 'must have' platform for many advertisers because of its reach. This reach is testament to its significant market power in social media where it faces only limited constraints. Facebook's average revenue per user in the UK has increased from less than £5 in 2011 to over £50 in 2019, and our comparison with other social media platforms suggests that its average revenue per user in 2019 was significantly higher than that of its competitors. As Google its profitability has been well above what is required to reward investors with a fair return, its return on capital employed being more than five times above its cost of capital.

36. In open display advertising, we found that Google is by far the largest intermediary, which a share of between 50 – 100% of the key intermediation functions. Intermediaries as a whole capture at least 35% of the value of advertising bought from newspapers and other content providers in the open display segment in the UK. Greater competition and transparency would put downward pressure on these intermediaries' fees, helping publishers to receive a larger share of this value.

37. A large market share is not necessarily a concern where a platform has gained it by being consistently better than its competitors and where it must respond to continued competitive pressures to maintain that position. However, where, as we observed in our Market Study, potential competitors face substantial barriers to entry and expansion, such that the market is no longer properly contestable, a high market share can translate into market power, giving the platform the opportunity to increase prices, reduce quality or leverage market power to undermine competition in potentially competitive markets and deny innovative rivals the chance to bring new services to market.

38. In relation to Facebook and Google, we identified several characteristics that entrench their market power. These characteristics inhibit entry and expansion by rivals and undermine effective competition. These include:

    - Network effects and economies of scale
    - Consumer behaviour and defaults
    - Unequal access to user data
    - Lack of transparency
    - Importance of Ecosystems
    - Conflicts of interest in vertically integrated businesses

3.1. Network effects and economies of scale

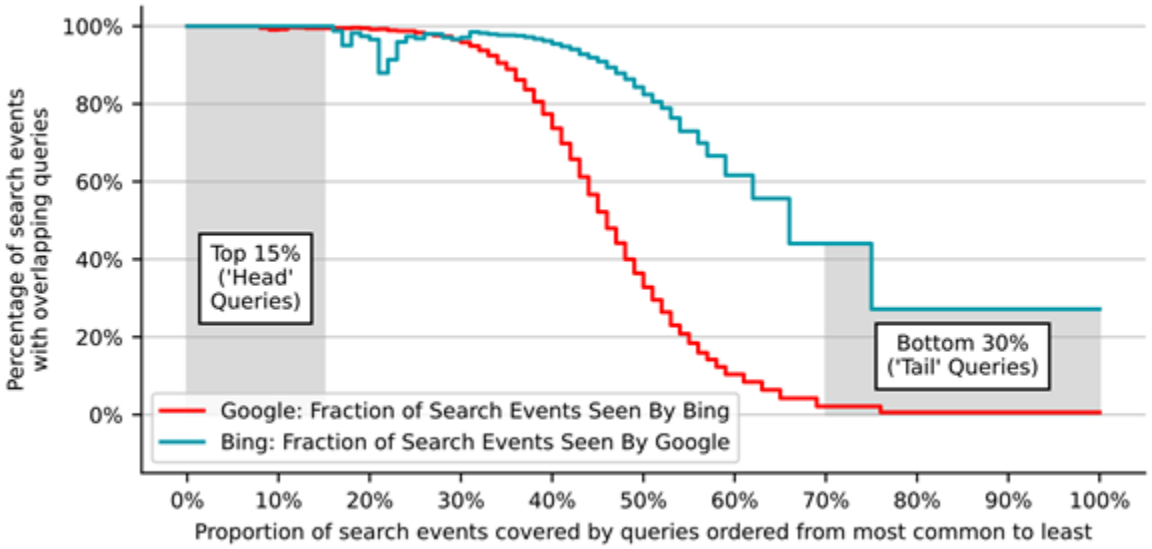
39. Network effects occur when the value of a service to its users increases as the total number of users increases. Economies of scale arise where average costs decrease with increasing scale. These features mean that once a platform reaches a certain size, it can be extremely difficult for smaller new entrants to challenge them effectively.

40. In relation to **search**, the crawling and indexing activities required to create a 'map' of the internet that can be searched in real time represent a major cost and are subject to significant economies of scale.

41. There are advantages to scale in user queries and click behaviour (known as 'click-and-query' data), since the more such data that search engines have, the more able they are to improve their algorithms. Such scale advantages are particularly high for uncommon or 'tail' queries. Both Google and Microsoft told us that a substantial proportion of queries that they see are uncommon or new, which suggests that the ability to return appropriate results for such tail queries is likely to be valuable to consumers, and to be an important factor in users' assessment of search quality. In addition, a higher volume of user search queries is of benefit to advertisers wishing to bid for keywords in the tail of uncommon search queries. The greater scale of queries seen by Google supports its ability to deliver more relevant search results compared to its competitors, especially in relation to uncommon and new queries. In view of the importance of search relevance to consumers and keyword coverage to advertisers, a lack of comparable scale in click-and-query data is likely to be a key factor that limits the ability of other search engines to compete with Google.

42. We conducted an analysis of all of the search events seen by Google and Bing in a one-week period in the UK, and found that while a relatively large proportion (over 30%) of Bing's tail queries were also seen in the Google dataset, a very small proportion (1%) of Google's tail queries were also in the Bing dataset. These results, shown in the figure below, demonstrate Google's scale advantages over Bing in relation to uncommon search queries.

Figure 2. Distribution of the percentage of Google search events which were for queries seen by Bing, and vice versa, by the frequency of their search query



Note: We define the head as the 15% of queries seen most often in a dataset and the tail as the 30% of queries seen least often.
Source: CMA analysis of Google and Bing data

43. **Social media** platforms are characterised by strong network effects, since the value to someone of joining a network is directly related to the other people who are already on the network. Having a large network of connected users also attracts developers and content providers to the platform - which in turn further increases its value to users - and advertisers keen to access a wide range of users.

44. These characteristics lead to substantial barriers to expansion. While there have been some examples over the last decade of entry in the social media sector funded by display advertising, with the possible exception of Instagram, these entrants are yet to reach a very significant scale in the supply of display advertising.[11] Rival social media platforms do not act as a material threat to Facebook's competitive position. Although new entry is possible, new platforms must overcome network effects and other barriers by offering a differentiated proposition that induces users to switch. No current platform offers a range of services comparable to Facebook's and none can provide access to a similarly extensive user base. Even where platforms are successful in developing a user base, to be viable in the long-term, they must successfully monetise their services, and in the last ten years we note that rival platforms have struggled to do this.

3.1.1. Consumer decision-making and the power of defaults

45. Consumers in the digital economy display 'default behaviour' ie a propensity to avoid wasting time by accepting the default option presented. This default behaviour has had a profound impact on the shape of competition in both search and social media. First, defaults play a very important role in influencing consumers' use of search engines, and second, default settings and the way in which choices are presented to consumers have a strong influence on the ability of platforms – particularly social media platforms – to collect data about their users, and the ability of users in turn to control the use of their data.

46. In search, Google pays a high share of search advertising revenues to Apple and many of the largest mobile phone manufacturers in return for Google Search occupying the default search positions on the device. In 2019, Google paid around £1.2 billion in return for default positions in the UK alone. Rival search engines to Google that we spoke to highlighted these default payments as one of the most significant factors inhibiting competition in the search market. Google's extensive default positions across devices and browsers, and in particular on almost all mobile devices in the UK, act as a barrier to expansion for other search engines, making it more difficult for these providers to grow their user bases and improve their search quality and search monetisation rates. In addition, there is likely to be a positive feedback loop between Google's position as the largest search engine and its ability to acquire extensive default positions that further reinforce this position.

47. Defaults also play an important role regarding consumers' control over their data. We found that consumers do not have sufficient control over what data they provide to platforms and how it is used, because of platforms' restrictions of choices and use of defaults and choice architecture. Some platforms operate a take-it-or leave-it model, where they do not give their users the ability to control their data. This is particularly prevalent across most social media platforms, including Facebook and Instagram, whose users are unable to turn off personalised advertising while continuing to use the service.

48. Even with those platforms who do offer a choice in principle, we are concerned that this is typically not, in practice, provided in a way that users can realistically be expected to engage with. It is often time-consuming and complicated to exercise choice because of the way in which options are framed. We reviewed a number of social media platforms during our Market Study and found that it is not obvious how to access their privacy settings. We also identified many examples of how platforms' choice architecture and use of defaults inhibits consumers' ability to exercise informed choice and nudges consumers into making choices that are in the best interest of the platforms. We also found that platforms' privacy terms and conditions were long and complicated, typically stretching to many thousands of words. It is not surprising, therefore, that many consumers do not engage, despite evidence

[11] We note that in the case of Instagram, its success in achieving scale may be linked to its acquisition by Facebook.

that most would like to have more control over the use of their data. Most platforms only collect limited data about consumer engagement with their privacy settings and controls, but the evidence that does exist suggests that consumer engagement overall is very low.

3.2. Unequal access to user data

49. Data about users is highly valuable for targeting digital advertising (particularly display advertising) and measuring its effectiveness. Advertisers and publishers told us that Google and Facebook enjoy significant competitive advantages in both targeting advertising and measuring its effectiveness because of their extensive access to user data.

50. Google collects a vast amount of user data from three main sources: from its user-facing services; from mobile devices running Android, Google's operating system; and from the analytical technology they place on third-party sites and apps (known as tags). Facebook gathers user data from the three main services it provides in the UK (Facebook, Instagram and WhatsApp) and from Facebook analytics technology placed on third-party sites (known as pixels).

51. Advertisers and media agencies told us that Google offers in-depth targeting options, driven by its unique and vast sources of data, while Facebook has the advantage of offering the ability to target specific audiences based on demographic characteristics, interests and location. This creates a substantial competitive advantage for Google and Facebook, both of which have access to more extensive datasets than their rivals. The inability of smaller platforms and publishers to access user data creates a significant barrier to entry.

52. As noted above, the evidence suggests that the user data used for targeting digital advertising – particularly display advertising - is highly valuable to advertisers and publishers. For example, our analysis of the results of a trial Google ran in 2019 suggests that UK publishers earned around 70% less revenue when they were unable to sell personalised advertising but competed with others who could.

53. The ability to measure the effectiveness of advertising is an important driver of advertisers' decisions on how to allocate expenditure across publishers and platforms. To measure effectiveness, advertisers need to be able to track user actions online, which is done through analytical tools such as tags. Google tags and Facebook pixels are widely available on advertiser websites and apps. In particular, multiple studies have found that Google tags are found on over 80% of the most popular websites, and that Facebook has the second highest prevalence of tags, covering between 40-50% of the most popular websites. Both dwarf other platforms' very limited coverage. In addition, Google's mobile data also allows it to track user actions offline (eg to identify visits to shops). This means that Google and Facebook are better able to track users and demonstrate the effectiveness of using their platforms relative to others, which is likely to create a barrier to entry for potential rivals.

3.3. Lack of transparency

54. The operation of user-facing services such as search and social media and of programmatic digital advertising involves complex decision-making in real time using large quantities of data. This is only possible through the use of sophisticated algorithms. Yet these 'black box' decision-making processes make it difficult for market participants to understand or challenge how decisions are made and to exercise choice effectively.

55. In relation to the auctions used to sell advertising inventory, for example, we found that platforms have considerable discretion over a wide variety of parameters that affect the prices advertisers pay, including how relevance is assessed and the level of reserve prices (which determine the price paid in over half of the auctions in Google Ads). Further, for

the substantial majority of advertisers which make use of platforms' automated bidding tools, platforms even have discretion over which auctions advertisers participate in and the level of their bid. Over 90% of UK advertisers on Facebook use the default automated bidding feature, which does not allow advertisers to specify a maximum bid.

56. Several newspapers also expressed concerns about the impact of algorithms employed by Google and Facebook on traffic to their sites. We found that these two platforms provide almost 40% of the traffic to large publishers and heard concerns about unexpected changes to the Google Search and Facebook News Feed algorithms that have resulted in dramatic reductions in traffic to certain newspapers overnight.

57. This reliance on opaque algorithms poses a fundamental challenge to traditional notions of how markets work. Since they are unable to scrutinise the basis on which decisions are made, platforms' users are often required to accept outcomes on trust. From the platforms' perspective, it can be difficult to convince sceptical users that they are making decisions in their best interests, since there is no independent verification of this. Effectively, platforms both set the rules and are the sole arbiters of whether they abide by them.

58. In relation to monitoring the quality and effectiveness of digital advertising, neither Facebook nor Google allows full independent verification of its own inventory. This has led to a perception on the part of advertisers and agencies that we spoke to that Google and Facebook are able to 'mark their own homework' for the measurement of viewability of ad impressions on their own inventory. This could weaken competition, potentially resulting in advertisers over-paying for advertising inventory.

59. The lack of transparency is particularly severe in the open display market where publishers and advertisers rely on intermediaries to manage the process of real-time bidding and ad serving but cannot observe directly what the intermediaries are doing or, in some cases, how much they are being charged. Market participants such as newspapers and advertisers typically do not have visibility of the fees charged along the entire supply chain and this limits their ability to make optimal choices on how to buy or to sell inventory, reducing competition among intermediaries.

60. Overall, the lack of transparency that we observed has the potential to create or exacerbate a number of competition problems. Platforms with market power have the incentive and ability to increase prices, for example, or to overstate the quality and effectiveness of their advertising inventory. They can take steps to reduce the degree of transparency in digital advertising markets, reducing other publishers' ability to demonstrate the effectiveness of their advertising and forcing advertisers to rely on information and metrics provided by those platforms. And the lack of transparency undermines the ability of market participants to make the informed decisions necessary to drive competition. The upshot of all of these issues is that competition is weakened and trust in the market is eroded.

3.4. The importance of ecosystems

61. Google and Facebook have built large 'ecosystems' of complementary products and services around their core service. For example, in addition to search, Google has a strong position in browsers (through Chrome), operating systems (through Android) and video streaming (through YouTube). From its origins as a social network, Facebook has expanded into messaging, devices, gaming and retail.

62. Integration of a wide range of products and services can deliver efficiency savings and can also improve the consumer experience overall, by increasing the ease with which a range of different services are accessed. Yet the increasing expansion of Google and Facebook's ecosystems can also give rise to competition concerns.

63. Platforms with market power can leverage their position into downstream or adjacent markets, giving themselves an advantage over potential competitors and undermining competition in those markets. We heard numerous complaints about this form of activity, for example that Facebook is using its position in social media to leverage into adjacent markets, or that Google is using its position in general search to undermine competition in different forms of specialised search, including online travel agents and shopping comparison services.

64. Further, platforms can use ecosystems to protect their most profitable services from competition. If platforms can convince consumers to stay within their ecosystem, a new entrant would need to compete on many fronts to displace them. In addition, by gaining control of certain adjacent markets (for example, browsers and operating systems for Google), platforms can control the entry points to their core markets. Further, where the adjacent market may impose a competitive constraint in the future (for example, specialised search and display advertising for Google), controlling it can insulate the platform from the future threat of competition.

65. Finally, by expanding the breadth and variety of online services provided, Google and Facebook are able to gather increasing amounts of the two critical inputs to the digital advertising market: consumer attention and data. This in turn results in greater advertising revenues, enabling them to invest at a greater rate than their rivals, which creates a feedback loop that further cements their powerful position.

3.5. Vertical integration and conflicts of interest

66. All of the advertising-funded platforms that we considered in our Market Study are vertically integrated in the sense that they run integrated sales functions – often based on the use of quality-adjusted second-price auctions – for the sale of their own advertising inventory. This is generally referred to as 'owned and operated' inventory. In contrast, in the open display market, publishers and other content providers compete to sell advertising inventory using a wide variety of third-party intermediaries and exchanges.

67. We heard a number of concerns, particularly from publishers, about the extent of vertical integration that has taken place in the open display market. While vertical integration can allow intermediaries to realise technical efficiencies, it can also give rise to conflicts of interest and allow companies with market power at one stage of the value chain to use it to undermine competition at other stages. The concerns we heard focused on the role of Google, which, as discussed in response to the first question has a very strong position in advertising intermediation in the UK. Google has market power in the open display market stemming from three main sources: its inventory of search and display advertising and associated large base of advertisers; its data on users; and its strong position in intermediation, particularly as the largest publisher ad server, initially through the acquisition of DoubleClick and other intermediary businesses.

68. We identified two main concerns. First, Google has been able to use its market power in search and its wider ecosystem to build its position as a DSP. This has involved leveraging its user data and large base of advertisers (from Google Ads) to favour its DSP, and tying access to YouTube to use of its DSP services. Second, Google's strong position at each level of the intermediation value chain creates clear conflicts of interest, as it has the ability and incentive to exploit its position on both sides of a transaction to favour its own sources of supply and demand. While some other intermediaries are also vertically integrated,[12]

[12] There has also been an increasing trend towards vertical integration, with providers fulfilling more than one function. Recent examples include FreeWheel's expansion from ad serving into SSP through the acquisition of

Google's market power gives it the ability to exploit these conflicts by self-preferencing its own activities, and thereby further reinforcing its market power.

69. Overall, the fact that Google has a very strong position as: a publisher ad server, with influence over which ads are served and at which price; an SSP, which sells inventory on behalf of publishers; and a DSP, which buys inventory on behalf of advertisers, raises clear conflicts of interest. Google has been able to exploit these conflicts in the past and retains the ability and incentive to continue to do so.

4. Other relevant policy areas

70. We focus our response on two main areas. First, we briefly summarise the findings of our Market Study in relation to harms to consumers as a result of weak competition. We then turn to challenges resulting from the gatekeeper function that large platforms increasingly adopt in the digital economy.

4.1. Harms to consumers

71. Our Market Study investigated both digital advertising markets and the provision of consumer facing services by platforms funded by digital advertising. We identified significant concerns that Google and Facebook are not facing sufficient competition in either of these services, resulting in consumers facing harm.

72. Insufficient competition to Google and Facebook can result in harm to consumers through a variety of routes. This includes any direct effects on consumers resulting from their use of the platforms themselves, such as receiving a poor-quality service, seeing too many adverts, or having to give up too much of their own personal data. In addition, harm to consumers can come indirectly as a result of other companies such as advertisers and newspapers being made worse off by the platforms' market power. For example, through the prices that are charged for electronics, flights and hotels, and insurance, all of which make substantial use of digital advertising, or through a reduction in the quality of journalism. Our report identifies five broad adverse outcomes for consumers and for society generally:[13]

    - reduced innovation and quality;
    - higher prices paid for goods and services;
    - poor returns for consumers;
    - erosion of privacy and data protection; and
    - broader social harms.

73. The revenues and prices Google and Facebook can earn from digital advertising, as well as their profitability suggests that consumers could see substantial financial gain from a more competitive market. More importantly, we expect that a more dynamic and competitive market, with a more credible threat of new entrants displacing the powerful incumbents, will increase the chance of transformative disruptive innovation coming forward. Consumers would directly benefit from more competition, which they will experience

StickyAds in 2016; Adobe's expansion into the DSP market through the acquisition of TubeMogul in 2017; and Amazon's launch of a header bidding solution in 2018.

[13] See Chapter 6 of the Final Report.

through more choice, better quality, innovative products and services and real control over how their data is used.

74. Further, although services such as search and social media appear to be free to those who use them, they are paid for indirectly through advertising revenues. The costs of digital advertising, which amount to around £14 billion in the UK in 2019, or £500 per household, are reflected in the prices of goods and services across the economy. These costs are likely to be higher than they would be in a more competitive market, and this will be felt in the prices that consumers pay for hotels, flights, consumer electronics, books, insurance and many other products that make heavy use of digital advertising.

75. We would also expect to see a range of other beneficial outcomes for society from more vibrant competition, in particular, improving the bargaining power of online news publishers would improve the health and sustainability of journalism in the UK, both nationally and regionally, and in turn contribute positively to the effectiveness and integrity of our democracy.

4.2. Competition and data protection

76. In the Market Study we heard concerns that large platforms use data protection regulations such as the General Data Protection Regulation as a justification for restricting access to valuable data for third parties, while retaining it for use within their ecosystems, thereby consolidating their data advantage and entrenching their market power.

77. Platforms have a crucial 'gatekeeper' function in the digital economy, mediating relationships between consumers and businesses in a wide variety of markets. We found that, by virtue of this position, and their market power, large platforms such as Google and Facebook increasingly appear to be acting in a quasi-regulatory capacity in relation to data protection considerations, setting the rules around data sharing not just within their own ecosystems, but for other market participants. Google's announcement at the beginning of 2020 that it was phasing out support for third-party cookies on the Chrome browser, restricting publishers' ability to offer personalised advertising, is an important example of this. Our concern is that such platforms have an incentive to interpret data protection regulation in a way that entrenches their own competitive advantage, including by denying third parties access to data that is necessary for targeting, attribution, verification and fee or price assessment while preserving their right to use this data within their walled gardens.

78. Based on this concern, the CMA has undertaken to conduct further work together with the UK's Information Commissioner's Office (ICO), the UK's independent authority responsible for upholding information rights and data privacy for individuals. In conducting this joint work, we consider it important to ensure that consumers rather than platforms are in control of their personal data, and to encourage a modern view of data protection regulation, which empowers consumers and avoids favouring large integrated platforms over smaller publishers. In relation to consumer empowerment, we consider it important to explore how consumers can be presented with choices that are unbiased, meaningful to them and easy to act upon, avoiding friction and confusion and facilitating genuine control. In relation to competition, we want to address the concern expressed above that some platforms are increasingly acting in a quasi-regulatory capacity.

79. The key focus our work with the ICO in the near to medium term is on the interaction between competition and data protection regulation in digital advertising markets.[14] An important element of this work will be how to respond to and engage with Google's

[14] The additional work will have several components, these are set out in Chapter 10 of the Final Report

proposals for phasing out third party cookies on Chrome and the development of its Privacy Sandbox proposals on Chromium browsers.

5. Policy options for promoting competition and other policy goals in digital advertising markets

80. On the basis of the evidence we gathered in the Market Study, we recommended that the government bring forward legislation to introduce a pro-competition ex ante regulatory regime, to oversee the activities of online platforms funded by digital advertising. The regime would be a 'pro-competition' regulatory regime, in that its objectives would be to encourage competition by overcoming barriers to entry and expansion, thus tackling sources of market power and promoting innovation. In addition, it would protect competition and consumers where online platforms have a position of market power, by ensuring they do not engage in exploitative or exclusionary practices, or practices likely to reduce trust and transparency.

81. We concluded that Google and Facebook have such entrenched market power as a result of a range of interrelated and self-reinforcing entry barriers, that the CMA's current tools, which allow us to enforce against individual practices and concerns, are not sufficient to protect competition. Further, the markets we have reviewed are fast-moving, and the issues arising within them are wide-ranging, complex and rapidly evolving. Tackling such issues requires an ongoing focus, and the ability to monitor and amend interventions as required.

82. We therefore recommended a new pro-competition regulatory regime with strong and clear ex ante rules, which can address a wide range of concerns holistically, can be enforced rapidly by a dedicated regulatory body, and can be updated and refined as required. The regulatory regime that we recommended comprises two broad categories of intervention:

    - an enforceable code of conduct, which is designed to protect competition by governing the behaviour of platforms that have market power over an important online gateway; and
    - a range of pro-competitive interventions, which are designed to tackle the sources of market power and promote competition and innovation.

83. These two categories of intervention have distinct functions. The function of the enforceable code of conduct would be to govern the behaviour of platforms that enjoy a position of market power. It would apply to platforms with 'strategic market status' (SMS), as envisaged by the Furman Review. The objective of the code would be to address the harmful effects that can arise from the exercise of market power, thereby helping to 'protect' competition, rather than tackling the underlying causes of market power.

84. Pro-competitive interventions, in contrast, would aim to address the sources of market power that we have identified within the markets we have reviewed, by tackling issues on both the demand and supply side of those markets and thereby seeking to 'promote' competition. These include a number of types of intervention suggested by the Furman Review – in particular, data-related remedies including the provision of third-party access to data and measures to increase interoperability – as well as remedies not directly considered by the Furman Review, including consumer control and separation measures. Many of these would be very significant interventions, the costs and benefits of which would need to be considered very carefully.

85. Consistent with the Furman recommendations, we used the term Digital Markets Unit (DMU) to refer to the body empowered to implement the regulatory functions we are

considering. We used the term DMU very broadly, noting that this could be a new or an existing institution, or even that the functions could be assigned across several bodies.

86. In the Final Report we assessed in some detail how the code and pro-competitive interventions should be used to address the issues we identified in relation to search, social media, consumer control over data, and digital advertising. In particular, we considered a range of pro-competitive interventions to tackle the sources of market power of Google and Facebook in search, social media and digital advertising, including:

    - restricting Google's ability to secure default search positions, to limit the monetisation of default positions on devices and to introduce choice screens for consumers;
    - requiring Google to provide click and query data to third-party search engines to allow them to improve their search algorithms, thus helping to overcome Google's scale advantages in data;
    - mandating greater interoperability between Facebook and rival social media platforms, to overcome network effects;
    - increasing consumer control over data by requiring platforms to give consumers the choice not to share their data for personalised advertising, placing a duty on platforms to ensure that they are maximising users' ability to make informed choices about the use of their personal data and by facilitating data mobility;
    - mandating data separation, where the data has been collected by the platforms through the leveraging of market power;
    - ownership separation or operational separation and requiring parties to provide access to inventory on reasonable terms.

87. The CMA is currently building on these recommendations of the Market Study in its work leading the UK Government commissioned Digital Markets Taskforce, to provide advice on digital regulation.

88. In driving forward this work through the Digital Markets Taskforce, the CMA recognises that the issues in digital markets are not limited to competition. Digital markets are increasingly interconnected and action in relation to competition may increasingly have consequences for work in relation to privacy, online harms, intellectual property, and consumer protection. The CMA is therefore working together with Ofcom (the UK communications regulator) and the Information Commissioner's Office (the UK privacy regulator) through the Digital Regulation Cooperation Forum to support regulatory coordination in digital markets.

89. In relation to enforcement action, the CMA is currently actively considering possible cases in the digital sector, drawing on the work of the Market Study. More broadly, the CMA will also continue to consider any examples of digital platforms exploiting their market power or otherwise engaging in anticompetitive conduct, and will stand ready to take enforcement action where it identifies evidence of anti-competitive conduct.

90. We recognise that the challenges we identified in the Market Study are global in nature, and that there is a strong case for international consensus-building and coordination in tackling them. We are therefore happy to contribute to this vital global debate, through the OECD and other international fora.