

Value of News to Digital Platforms in the U.K.

Study by Professor Matthew Elliott, University of Cambridge, published by News Media Association

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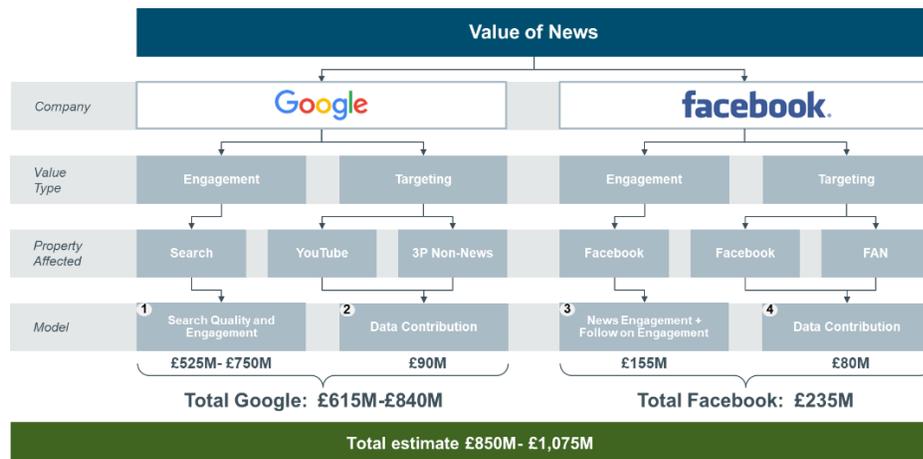
Prof. Matthew Elliott is Professor of Economics at the Faculty of Economics, University of Cambridge and a Fellow at Jesus College, Cambridge. His research expertise covers a wide range of issues including search, matching and networked markets incorporating theoretical, empirical, and experimental approaches. He holds degrees from Oxford University and Stanford University. Professor Elliott was provided compensation for his time researching this subject. The findings in this paper reflect his own views.

Executive Summary

News publishers small and large are longstanding pillars of democracy, making significant investments to provide crucial information to the public on the events shaping our society. News is also important for digital platforms like search engines and social media. The content produced by news publishers provides a stream of fresh and relevant information that keeps users engaged and returning. Digital platforms monetize user attention through digital advertising – engaging users and capturing user activity data are central to their business models. Estimates based on company reporting indicate that Google earned £10.8 Billion from advertising in the U.K. in 2021, while Facebook earned £5.3 Billion. Digital platforms share little, if any, of these revenues with the publishers of the news content on which they rely. For efficient investments to be made in generating high quality news, the benefits generated from the investments of news publishers should mainly accrue to them rather than to intermediaries like Google and Facebook. The fact that high quality news content generates wider benefits to society makes this problem acute.

This document first provides some brief context on how Google and Facebook earn revenue. Second, it outlines the mechanisms through which Google and Facebook benefit from news organizations to generate user engagement and data. Third, it undertakes a series of exercises that assess the magnitude of revenue that Google and Facebook derive from news content. The value of news to Google and Facebook is estimated by considering how much Google’s U.K. revenues would decline were news content to be withheld from Google, and separately, how much Facebook’s U.K. revenues would decline were news content to be withheld from Facebook. The intention of these exercises is to help estimate the surplus generated on digital platforms; negotiations and legislative efforts are left to establish an appropriate split of the surplus jointly generated by platforms and news publishers that suitably rewards news publishers for their investments. On this basis, the annual revenues derived from news content by both Google and Facebook combined are estimated to be approximately £1 Billion per year. These estimates could be further refined based on Google and Facebook internal data.

Figure 1 – Summary of estimates of value of news to Google and Facebook



Digital Platform Business Models

Google

Google's largest revenue source is showing ads to users who search on its search engine, generating an estimated £7.5 Billion in the U.K. in 2021.¹ Advertisers pay Google to display ad links in the search results, based on the search query entered by the user. For instance, a medical test provider may aim to show ads to users who search for "PCR test." Google determines which ads to display and where to display them based on how much advertisers are willing to pay per click on the ad and how relevant Google judges that ad to be for the user's search query.

It is important to Google's business that it acts as a de-facto gateway to the internet for many users. The prominence given to different ads impacts the links on which users subsequently click. This can induce intense competition between advertisers to have their ad displayed more prominently. As many users rely on search engines to navigate the internet, and the vast majority of these in the UK rely on Google, Google is in a position to extract substantial rents associated with downstream markets.

Google also earns revenue from ads shown to users on YouTube and by providing advertising technology services to publishers and advertisers; these advertising technology services enable advertisers to purchase ads on publisher sites and enable publishers to sell such ads. For the U.K. in 2021, Google's revenue from YouTube is estimated at £1.6 Billion and revenue from advertising technology is estimated at £1.8 Billion.² Advertisers have a higher willingness to pay for ads that are targeted based on user data: a Google study attributes 52% of advertiser spend to "cookies", or ad technology that shares user data to advertisers.³ In other words, about half the ad spend is associated with the value of user data. Google captures user data across Google search, YouTube, other Google properties such as Maps, and across the properties of publishers, including news publishers, who use Google's advertising technology tools. Using this user data for ad targeting contributes to Google's revenue.

¹Google does not report revenue earned in the U.K. on a standalone basis. We estimate Google's U.K. revenue from search advertising by taking EMEA "Search and Other" revenue reported in Alphabet's 10K filing, removing Google Play revenue, and adjusting for the U.K. as a share of EMEA digital advertising.

Alphabet Inc. Form 10-K For the Fiscal Year Ended December 31, 2021, https://abc.xyz/investor/static/pdf/20220202_alphabet_10K.pdf, <https://www.reuters.com/technology/google-play-app-store-revenue-reached-112-bln-2019-lawsuit-says-2021-08-28/>

All U.S.D to British pound conversions assume the average exchange rate for 2021(0.7271)

² Estimated based on revenues by segment (Google Network Members' properties and YouTube) from Alphabet 10K filing and scaling for the U.K. as a share of total revenues

<https://www.sec.gov/Archives/edgar/data/1652044/000165204422000019/goog-20211231.htm>.

³ https://services.google.com/fh/files/misc/disabling_third-party_cookies_publisher_revenue.pdf

Further, the 52% estimated by Google has been found higher in other estimates. The CMA repeated the analysis using data provided by Google and found that "The results of our analysis show that blocking third-party cookies decreases short-run publisher revenue by 70% of the average revenue per query in the control group, which approximates business as usual during the study period." CMA, Online platforms and digital advertising Market study final report 1 July 2020, Appendix F: the role of data in digital advertising

Facebook

Facebook generates an estimated £5.3 Billion from advertising in the U.K.⁴ We conservatively estimate 50% of this revenue to be on the “main” Facebook property (i.e., excluding Facebook’s other properties Instagram and WhatsApp, where news content is currently less prominent). Facebook’s advertising revenue is generated by showing ads on Facebook’s properties next to content generated by each user’s friends, family, groups, businesses, and content creators. The more time users spend on Facebook, the more ad space is available to be sold, making consumer engagement crucial for Facebook’s business model. Strong complementarities underlie this. On the user side, the benefits that users experience from Facebook, and hence their engagement with it, depends crucially on the engagement of their Facebook connections. On the advertiser side, Facebook allows advertisers to target ads to users based on user characteristics inferred from user profiles and activities on Facebook’s digital properties. Thus, the time users spend, and the actions users take on Facebook, contribute to Facebook’s revenue by generating data that increases the effectiveness of ad targeting and therefore the amount that advertisers are willing to pay for such ads. Facebook also offers advertising technology tools which allow advertisers to purchase ads on third-party (i.e., non-Facebook) apps using Facebook’s data for targeting. Facebook does not disclose the revenue it earns from such tools, but public coverage suggests this revenue was approximately £42 Million in the U.K. in 2021.⁵

Why News Content is Important to Digital Platforms

News content has several characteristics that make it particularly relevant to engaging users and capturing valuable data for online advertising. First, news provides reliable information – news publishers invest significantly in journalists and editors to generate news content and ensure reporting is properly sourced and fact checked. Second, news provides frequently updated content on a wide range of topics of interest to users, including breaking news, sport, politics, entertainment, product reviews, and a wide variety of other topics. Third, users who engage with news content tend to do so frequently, providing “fresh”, or frequently updated, data relevant to a user’s current interests and intent. Fourth, user engagement with news content can signal intent that is of particular value for advertisers, such as intent to move to a new house, purchase a car, take a holiday, and many other such actions, as well as relevant user characteristics including profession, leisure interests, age group. In November 2021, Ofcom and the CMA recognized that considering a “wider view” – that is, all of the benefits which accrue to Google and Facebook from the use of publisher content by their platforms – is important to estimating the value of content to the platforms, and that to avoid considering these benefits would be to risk significantly underestimating that value.⁶

⁴ Estimated using Facebook U.K. number of users (<https://www.statista.com/statistics/1012080/U.K.-monthly-numbers-facebook-users/>), the average of Facebook quarterly ARPU in 2021 between the U.S. and Europe reported in Facebook’s 10K filing. To calculate revenues for Facebook’s main social media, excluding Instagram, WhatsApp and other Facebook properties, ARPU is divided by two, reflecting reporting in the U.S.

<https://www.emarketer.com/content/instagram-contributes-over-half-of-facebook-us-ad-revenues>.

⁵ Facebook Audience Network (FAN) revenue is estimated using reported 2018 payment to publishers (<https://digiday.com/media/facebook-plans-shut-facebook-audience-networks-mobile-web-arm/>) and scaling for U.K. share (<https://www.emarketer.com/content/big-swings-U.K.-digital-ad-spending-by-industry-retail-pulls-ahead>) of global ad spend (<https://www.forbes.com/sites/bradadgate/2021/12/08/agencies-agree-2021-was-a-record-year-for-ad-spending-with-more-growth-expected-in-2022/?sh=1fcba9107bc6>) in 2020 and, assuming the average network revenue share model of 30% revenue share for FAN.

⁶ Ofcom, CMA, *Platforms and content providers, including news publishers Advice to DCMS on the application of a code of conduct*, November 2021

News on Google Search

Continued consumer engagement on search – whereby users search for online content on Google – is crucial to Google’s business. News provides reliable, frequently updated content that is relevant to a wide variety of topics searched by users, generating significant content and clicks on Google’s search results. Consider again a user searching for “PCR test” on Google search. As well as ads shown by test providers, the user will likely see articles from news publishers on topics such as testing requirements for international travel (at least, in May 2022 – the topics covered in the news stories would vary over time, see Figure 2). The relevance of news content to searches outside of those that might be considered “news-seeking” is a key way in which news content creates value for Google’s search engine. Another example is a user searching for “trainers”, which may often indicate an intent to purchase trainers. Google’s search engine returns ads to this user, along with news stories (showcased as “top stories”) related to trainers. See Figure 2 for an example search results in response to these queries in the U.K. in May 2022.

Figure 2 – Google search results for query “PCR test” and “trainers”, U.K., May 2022

Google

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About 4,010,000,000 results (0.49 seconds)

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Darlington Test Centre

Tests For Individuals

Departure Testing

International Departure

Ad - <https://www.dam-health.com/> - Cambridge £49 In-Clinic PCR Test - Results In 24 Hours

https://www.gov.uk - [get-coronavirus-test](https://www.gov.uk/get-coronavirus-test) - Get a free PCR test to check if you have coronavirus (COVID-19)

https://www.nhs.uk - [testing/get-tested-for-coronavirus](https://www.nhs.uk/testing/get-tested-for-coronavirus) - Changes to testing for coronavirus (COVID-19) - NHS

https://www.nhs.uk - [coronavirus-covid-19/testing](https://www.nhs.uk/coronavirus-covid-19/testing) - How to do a PCR test for coronavirus (COVID-19) - NHS

https://officialrapidtests.com - [products/pcr-test-for-travel](https://officialrapidtests.com/products/pcr-test-for-travel) - PCR Test for Travel | Official Rapid Tests | £19.99

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Videos

How to take a PCR test at home

YouTube · UK Health Security Agency · 10 Feb 2022

What is PCR Testing for COVID-19?

YouTube · AACCC · 29 Apr 2020

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YouTube · Evening Standard · 2 Jan 2022

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https://gov.wales - [get-tested-coronavirus-covid-19](https://gov.wales/get-tested-coronavirus-covid-19) - Get tested for coronavirus (COVID-19) | GOV.WALES

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pcr test for travel

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Google

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About 3,000,000,000 results (0.69 seconds)

Ad - <https://www.jdsports.co.uk/> - Trainers At JD - Free Click & Collect - JDSports.co.uk

Ad - <https://www.sportsdirect.com/> - Trainers At Sports Direct - The Home Of Big Sports Brands

Ad - <https://www.adidas.co.uk/> - adidas® Trainers - 60-Day Free Returns

Ad - <https://www.mandirect.com/> - Up To 75% Off Trainers - Big Brand Trainers - Save On Trainers

https://www.jdsports.co.uk - [Men's Trainers | JD Sports](https://www.jdsports.co.uk/men/mens-footwear)

https://www.sportsdirect.com - [Mens Trainers | Sports and Lifestyle Sneakers](https://www.sportsdirect.com/mens/mens-footwear/trainers)

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Alberici Men's Tree Runners

Alberici UK

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By Klarna

£166.00

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On Cloud X Olive | Fit

By Google

£150.00

By Processa...

Tommy Hilgner - Signature

Tommy Hilgner

£90.00

By Processa...

Go **Next**

News can engage users on Google search in a variety of ways – for instance, a user may specifically be searching for news. Alternatively, the user may have something else in mind but come across a news link that captures their attention or enables their search queries to be answered more fully. For instance, news content can provide a user searching for a new car with reviews of the car or provide breaking news events about a user’s intended vacation destination. A representative survey of U.K. consumers carried out by my research support team in the U.K. in May 2022 (the “Value of News Survey”) found that, when considering their search engine usage, 70% of respondents report searching for news stories. In the same survey, 90% of respondents report sometimes finding news stories of interest when looking for some other information online.

Data from user queries helps inform the value of news to Google search. The News Media Alliance published a study based on a large dataset of user search queries and the corresponding search results on Google in the U.S. in 2019 (“the NMA dataset”). The search queries in the dataset are several thousand queries based on the top two hundred most frequently searched queries in the U.S. in 2019, as well as top trending queries on Google search according to the Google Trends site.⁷ This data is instructive for understanding the value of news to Google. In this dataset, news content is shown in response to more than 50% of user queries. We compare a similar dataset, with a smaller sample of search queries, captured in the U.K. in May 2022. The U.K. data shows similar results: 67% of the queries show news results. Further, of the queries that display ads, 59% in the NMA dataset also display news content and similarly 57% of searches that display ads also display news in the U.K. dataset.

For many users, finding useful results on Google that meet their needs on one query is likely to increase their future use of Google.⁸ Increased user engagement from news helps prompt additional searches by users and gives Google additional opportunities to show ads. Additionally, news, as a source of reliable information, creates a quality benefit that can help build user trust in search results. Thus, the contribution of news content on Google search goes beyond the query on which the user saw news content or clicked a news article. News results contribute to the overall user experience and hence provide further opportunities for Google to show ads through the increased engagement of users.

The value of news to Google search is supported by the ways in which Google prominently displays news content on its search offerings. The prominent “top stories” of results on Google search features news content. On mobile, the Google search app can suggest “trending searches” before the user even types a search query – these searches are generally related to topics in the news.⁹ A new “feed” to surface content relevant to users, launched by Google in 2017, displays news content along with content from other publishers.¹⁰ These ways in which Google treats news demonstrates that news plays an important role in driving user engagement across Google search.

⁷ See details of the NMA dataset in *Google Benefit from News Content*, June 2019 page 19

<https://www.newsmediaalliance.org/wp-content/uploads/2019/06/Google-Benefit-from-News-Content.pdf>.

⁸ As shown by Song, Shi and Fu (<https://www.microsoft.com/en-us/research/wp-content/uploads/2016/02/pe072-songPS.pdf>), as the quality of search results decreases, number of searches per user decreases with more pronounced effects over longer time horizons.

⁹ For example, on May 8, 2022, Google’s trending searches in the U.K. included “Ncuti Gatwa”, “Arsenal”, “Man City vs Newcastle” and “BAFTA TV Awards 2022”. [Google Trends](#)

¹⁰ [Google feed: feed your need to know \(blog.google\)](#)

News on Facebook

Facebook benefits from news content to keep users engaged across its properties in a similar way to Google. User engagement is central to Facebook's business, and the algorithms determining how content is shown to users have gone through many updates and refinements aimed to optimize user engagement. In the past, Facebook has described high quality posts as those that people consider timely, relevant, from a trusted source, genuinely interesting and that people would share or recommend.¹¹ User engagement is crucial to Facebook not only because it creates opportunities to sell ads, but because engagement by one user enhances the experience and hence engagement of that user's friends. These complementarities can cause changes in engagement to cascade. If some users reduce their engagement because Facebook changes its offering, this will reduce the engagement of these users' friends, which will reduce the engagement of their friends, and so on.

Loss of news content would considerably impact the content available on Facebook. It is likely that some news consumers would switch away or spend less time on Facebook if news content was unavailable in the platform. This would directly impact the number of ads Facebook could show to these consumers, and via complementarities, also reduce the engagement and hence ad revenue that could be generated from other consumers. At the same time, the data Facebook collects to target ads would diminish. This would reduce Facebook's revenue from ad targeting on Facebook and through the advertising technology services it offers advertisers.

Measurement of News Contribution to Digital Platform Revenue

As discussed, there are two main ways news contributes to Google and Facebook revenue: (1) user engagement caused by news content that facilitates the display of ads on news and non-news content, and (2) user targeting data gathered from user interaction with news content (Figure 1). Each platform and contribution type necessitates its own estimate using available data to analyze the effect on Google and Facebook of removing news content in the U.K.

Google

Value of News to Google Search Engagement

The relevance of results displayed in response to a user search query and the order in which they are displayed are important determinants of quality for a search engine. Google's users will value the search results returned to them more when more relevant results are displayed in more prominent positions. News content contributes positively to the quality of results for many search queries, as discussed above. On the other hand, ads can reduce the quality of search results. While some ads provide very relevant links and contribute positively to quality, other ads will be less relevant than organic search results that could have been shown in their place. In its use of ads Google trades off the quality of its search results, and hence future engagement, with current revenues.

While Google has a very strong market position (with 90% of search advertising in the U.K.¹²), Google would likely try to mitigate the impact on quality from the loss of news content. In the Value of News

¹¹ <https://www.facebook.com/business/news/News-Feed-FYI-Showing-More-High-Quality-Content>

¹² According to the U.K.'s Competition and Markets Authority (CMA), Google had more than a 90% share of the search advertising market in U.K. in 2019 https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_2020_.pdf.

survey, 70% of respondents reported that they would be somewhat likely, likely or very likely to use a different search engine for at least some searches, were news removed from their preferred search engine.¹³

A starting point for estimating the impact of removing news content on Google is to assume that Google's search results, prior to the removal of news content, maximize its quality across the available organic (i.e., non-paid) content; there are no organic results which are not displayed and would increase quality if displayed instead of other organic results. Thus, if news content is removed adjusting the display of the remaining organic results would not increase quality. Absent adding to the set of organic results available, Google's only option to mitigate the quality drop of removing news is to increase quality by adjusting the ads shown. The ranking of ads is determined by advertiser willingness to pay as well as their quality, and thus ads can receive higher ranking than their quality alone would determine. By removing some ads, Google can increase search results quality and offset the quality drop of news being removed.

First suppose that Google attempts to remove ads to the extent necessary to maintain its initial overall quality level (before news content was removed), while minimizing the impact on its advertising revenues.

Using the NMA dataset, and starting with all news content removed, we estimate the contribution of each ad to search quality.¹⁴ Some ads, a little more than half, contribute positively to quality and those remain in place. We then progressively remove the remaining ads and replace them with higher quality organic content. We start with the lowest ranked ad first and continue until either the estimated search quality is equal to the initial quality measured when Google could display news content or until we run out of ads available to remove to improve quality. For each ad removed, we calculate how much of the lost quality due to removal of news is recovered ("quality reflation"). We find that even if Google were to remove all ads contributing negatively to quality, reducing its ad revenue by about half, this would still not be enough to reverse the quality loss from removing news content. It is not possible for Google to recover the quality loss it would suffer from news content being withheld by removing ads.¹⁵

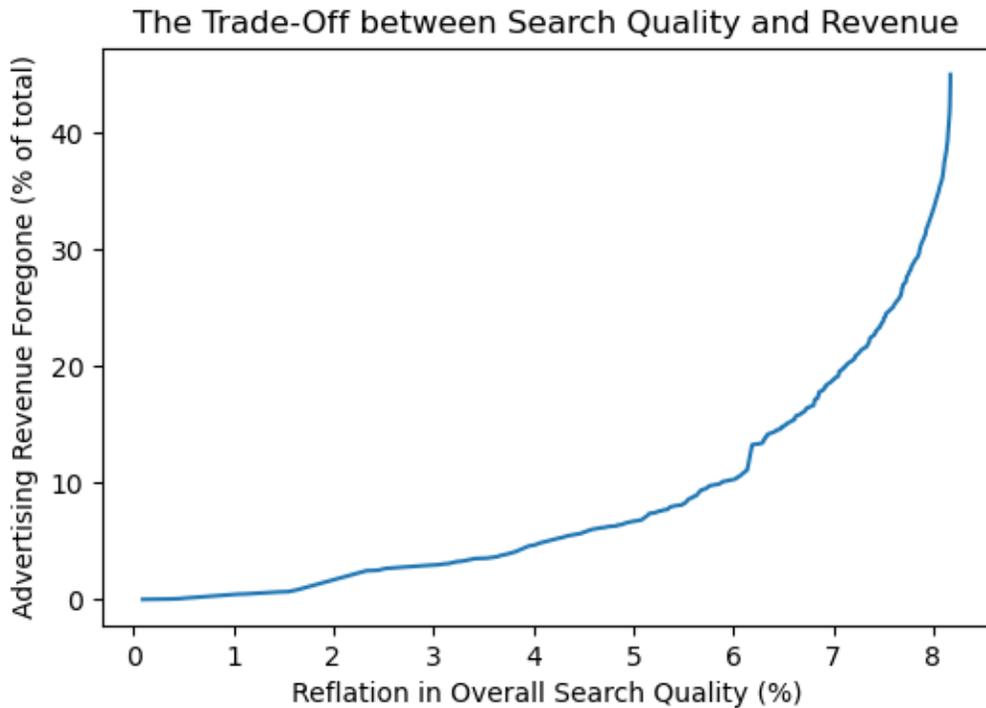
Figure 3 shows the trade-off Google would face after the removal of news content between recovering search quality and foregoing search revenue. In a conservative scenario where Google attempts to mitigate 5-6% of the overall loss in quality due to removal of news content, the revenue drop facing Google would be approximately 7-10% of annual search revenue, or a loss in annual revenues of approximately £525-750 Million in the U.K.

¹³ The Value of News survey was administered to a representative panel of U.K. adults by Prolific in May 2022.

¹⁴ For each ad, the quality contribution per GBP of revenue generated for Google is estimated.

¹⁵ This result holds across a wide range of specifications in this dataset and the smaller UK dataset from May 2022.

Figure 3: Trade-off between search quality and revenue



Caveats: This analysis is based on data provided by the News Media Alliance which was collected in 2019 for the U.S. The use of news content in search results has evolved since 2019 and the U.S. might not be representative of the U.K. However, analysis of a smaller dataset collected in May 2022 for the UK supports the conclusions. The analysis extrapolates from the search terms considered to all search terms; the search terms in the NMA dataset is not a representative sample and, for example, systematically overlooks longer more complex search queries. The analysis also makes assumptions that govern the relative quality of ads and news content. It is assumed that: (i) ads that appear alongside searches for specific products are on average just as good as organic content (hence many of these ads will contribute positively to quality); and (ii) ads that appear alongside other (more open ended) queries are on average worse than organic search items but can still be as good as the best possible organic search items. Note that giving ads higher average quality makes it harder to compensate for lost news by removing them. We cannot anticipate precisely how Google would trade-off quality versus its advertising revenues following the removal of news content. This exercise is intended to illustrate the trade-offs involved and the magnitude of the importance of news content to Google. In the longer run, failure to fully compensate for quality degradation will reduce user engagement with Google and induce further losses not captured by this analysis.

Value of News Data to Google

As described above, Google benefits from collecting data on news readers for targeting ad placements. Consumer data from interacting with news content allows Google to target ads on YouTube more effectively and to offer better ad services to third parties via more accurate targeting. Google's study of publisher revenue estimates that user data accounts for 52% of targeted ad spend. According to data provided in the Ofcom Online Nation 2021 Report, users spend about 5% of their time online reading news,

considering time spent on sites relevant to data tracking only (i.e., excluding BBC).¹⁶ Using time spent on news content as a proxy for share of data produced from user interaction with news content¹⁷ indicates that approximately 5% of user data used for targeting arises from news. Taking this share (5% of 52%) of Google's YouTube and advertising technology revenue provides an estimate that data from news readership contributes approximately £90 Million¹⁸ annual revenue in the U.K. to Google.

Caveats: The calculation underlying this number is based on the average value of data to Google, and how much news data contributes to the overall data Google has. It may overestimate the incremental value of news data if there are diminishing returns. On the other hand, news data is especially valuable to advertisers for a variety of reasons, and this may be resulting in an underestimate. Further, this estimate does not consider the value of data for targeting ads on Google search. Keywords are used for search advertising targeting; however, Google seeks permission from users to use user data to target ads on search, indicating that user data plays some role in further refining the keyword targeting. Nor does this estimate consider the value of user data inferred from user interaction with search results, including news content.

Facebook

Value of News to Facebook Engagement

As described above, user engagement is central to Facebook's business model and revenue generation. News content provides frequently updated, high-quality content that users can view and interact with on Facebook. According to data in the Ofcom Online Nation 2021 Report, users spend about 6% of their time online (excluding time on Facebook) on news. Suppose this is the proportion of time that Facebook users spend reading and engaged with news content appearing in feeds. If overall engagement scales proportionately with each type of original content, the impact of removing news on engagement would be approximately 6% of Facebook's U.K. revenues (£2.6 Billion excluding Instagram and WhatsApp), or £155 Million.

However, news content may generate relatively deep interactions and engage a broader audience per unit of content shared. It seems likely that news content underlies a disproportionate amount of interactions that are widely shared; for instance, according to data provided in the Facebook Widely Viewed Content Report for Q4 2021, of content views for the top 20 domains in Q4 2021 about 20% were views on posts by news domains.¹⁹ On average a news item would then underlie a larger proportion of users' time spent on the platform compared to a typical other item. This provides a straightforward way of considering the benefit to Facebook from news content. Data on user activity on Facebook would allow for further refinements to estimate the engagement with news content and the reduction in engagement and advertising revenue were news not available on Facebook.

To probe the reasonableness of these effects we make use of a natural experiment. In October 2021, Facebook experienced an outage that lasted approximately six hours. During this outage, news publisher

¹⁶ This number is estimated to take account of Google's ability to track users across different sites.

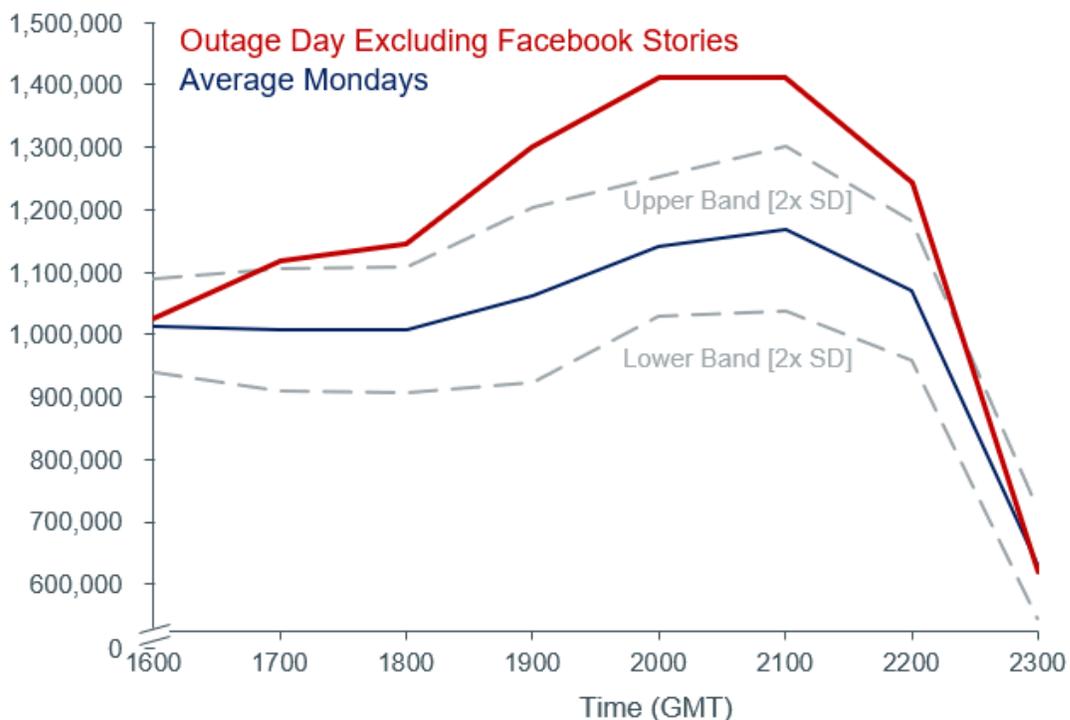
¹⁷ In other words, assuming users produce data valuable for ad targeting at a constant rate during their time online. This is a conservative assumption due to the freshness of data from news interaction and the relevance of data based on news activity to ad targeting, as described above.

¹⁸ $(£1,800+£16,00)*0.52*0.05 = £88M$.

¹⁹ <https://transparency.fb.com/data/widely-viewed-content-report/> News domains in the list accounted for about 0.4% of all Feed content views. The top 20 domains seen here collectively accounted for about 2.1% of all Feed content views in the US during Q4 2021.

traffic was elevated. Using data provided by one prominent U.K. publisher, the increase in page views and unique visitors were statistically significant and economically significant. More unique users than usual visited the news publisher and users also spent longer than usual on the publisher's site. In other words, evidence suggests that when Facebook is not available, some Facebook users seek out news content by going and go directly to news publishers. This is consistent with news content being an important source of user engagement on Facebook and points to lower user engagement on Facebook were news to be removed from Facebook.

Figure 4: Page views on a large U.K. publisher site, during the outage of Facebook on Monday October 4, 2021. The blue line indicates the average page views for Mondays other than the one with the outage, and the red line the page views on the day of the outage. The dotted grey lines indicate the 95% confidence interval.



Caveats: Following the removal of news content Facebook users may engage in the long run more or less with other content. While Facebook would substitute other content in place of news-seeded content, and hence in the short run overall user engagement would likely fall less than proportionately, in the longer run individual engagement with Facebook is likely to change more substantially. Moreover, the lost feedback effects generated by interactions among users would further reduce engagement. The calculation takes the view that overall, these effects mean that engagement is at least proportional to the loss in news content.

Value of News Data to Facebook

Facebook benefits from targeting ads using data from user interactions with content, including news content, and with each other. We estimate the value of data collected from Facebook users' interaction with

news content in broadly the same way as for Google.²⁰ We attribute a 52% share of Facebook's revenue from advertising and providing advertising technology services to the value of targeting and apportion a 6% share of this value to data arising from news content. This gives a value of £80 million revenue per year.

Caveats: The same caveats that data may have diminishing returns and that news data may be particularly valuable apply to this estimate, as applied in the case of Google's value of data.

²⁰ Facebook benefits from data collected on news readers on its social media platform and in providing ad services to other publishers and developers. Hence, the revenue used here includes both ad revenue generated on Facebook and FAN revenue.