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How Consumer Data Affects Competition Through Digital Advertising

Digital advertising allows advertisers to send targeted ads, meaning different users viewing the same website or app at the same moment might see different ads. By using targeted ads, websites and apps may have an advantage over other forms of media, such as magazines, radio, and television.

The collection of consumer data may affect competition in digital advertising and raise privacy concerns (see CRS Report R47298, *Online Consumer Data Collection and Data Privacy*, by Clare Y. Cho and Kristen E. Busch). This In Focus discusses how the collection of consumer data might affect competition among advertisers and among websites and apps that obtain revenue from digital ads.

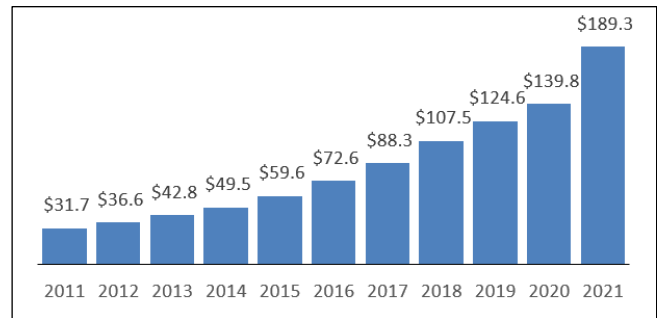
Consumer Data in Digital Advertising

To determine which ad each user receives, advertisers and operators of websites and apps can use software and tools known as *ad tech*. Advertisers use ad tech to place automated bids in a marketplace that runs an instantaneous auction. Advertisers identify their target audience based on demographics, past customers, and other factors that might suggest the user would be interested in the ad. They also indicate the level of exposure they want to achieve and the amount they are willing to bid. Websites and apps use ad tech to offer *ad spaces*—places where ads are displayed—in the marketplace, with information about the user currently viewing the page. The user sees the ad chosen by the marketplace, selected based on the advertiser’s bid and the relevance of the ad to the user. Ads receive higher relevance scores when they receive positive feedback, such as users clicking on the ad, whereas ads that trigger fewer responses receive lower scores.

Advertisers, as well as website and app operators, have incentives to improve their ad targeting by collecting detailed information about each user. Advertisers might expect more precise targeting to increase sales. Websites’ revenue may depend on how frequently users click on the ad or how much time users spend viewing the ad.

In the United States, digital ad spending made up 55.6% of total media ad spending in 2019 and 71.8% in 2022, according to an eMarketer article (November 7, 2022). Revenue from digital ads has increased substantially over the last two decades (**Figure 1**). Much of the growth in recent years has come from advertising on mobile devices.

Figure 1. U.S. Digital Advertising Revenue
(\$ in billions)



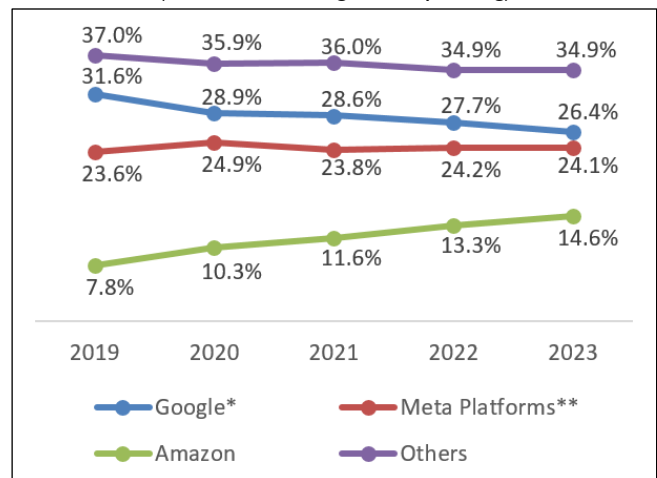
Source: Interactive Advertising Bureau, “Internet Advertising Revenue Report,” April 2022, prepared by PwC.

Note: Includes advertising on desktop and laptop computers, mobile phones, tablets, and other internet-connected devices and includes all formats of advertising.

Competition Among Websites and Apps

Google, Amazon, and Meta Platforms (the owner of Facebook and Instagram) collect most of the digital advertising revenue in the United States. eMarketer estimated that these three companies accounted for 63% of the digital ad revenue in 2019 and would account for 65.1% in 2023 (**Figure 2**).

Figure 2. Digital Ad Revenue Share by Company
(% of total U.S. digital ad spending)



Source: eMarketer, October 2021.

Note: Includes advertising on desktop and laptop computers, mobile phones, tablets, and other internet-connected devices; net ad revenues after companies pay traffic acquisitions costs to partner sites; *includes YouTube ad revenue; ** includes Facebook and Instagram ad revenue.

Any website or app can have digital ad spaces. Operators of websites and apps can obtain more consumer data by increasing the number of users or by acquiring more information about each user. Operators can sell more ad spaces to advertisers by increasing the number of users and can improve their ad targeting by acquiring more information about each user. The data collected might enable a website operator to better predict future product needs or set different prices for its services based on the day of the week. Operators may be able to improve their ability to predict consumer behavior by using machine learning or other technological developments.

Certain types of websites or apps may be better suited to obtain consumer data. An online marketplace or search engine is likely to have a wide variety of interactions with individual users who repeatedly shop or search for information. In contrast, a music streaming service may know only about users' musical tastes, location, and spending on its website.

Some website and app operators might pursue mergers and acquisitions to collect more or different types of data. For example, when Amazon acquired Whole Foods in 2017, Amazon obtained data on Whole Foods customers' grocery purchases. The acquisition also enabled Amazon to collect data on how the same consumer shops online and in person, which might be useful for targeting ads.

The amount of consumer data amassed by established website operators may give them an advantage over market entrants. Entrants might initially have fewer users and less information about them than established operators, such as their past product views, responses to ads, or browsing history. This might make new entrants less appealing to advertisers, resulting in fewer or lower bids.

Some companies that operate websites and apps rely on ad tech created by their competitors. While these tools may help website operators better target their ads by using more consumer information than the operators could collect on their own, the companies providing the ad tech obtain information about the websites' users as well. As a result, any consumer data obtained by a new website or app would also be acquired by its competitor.

Competition Among Advertisers

Improved ad targeting might increase competition among advertisers. Ads from lesser-known advertisers might be placed adjacent to ads from better-known competitors in response to a search term or phrase. An advertiser might ask that its ads be given to users who have viewed a well-known competitor's website. Targeted ads may be particularly beneficial for nascent companies without a large marketing budget or team and companies offering specialized products that might be of interest only for some people. In addition, targeted ads may be particularly beneficial for online-only sellers that may be reliant on advertising to obtain consumers, as they lack brick-and-mortar store locations.

However, the ability to target ads precisely might not increase competition if advertisers with large revenue

streams dominate the ads consumers receive. Advertisers with large budgets may be able to outbid smaller advertisers for ad spaces. For example, internet users searching for a hotel room may be more likely to encounter ads from travel booking agencies and large hotel chains than from an independently owned hotel. Although relevance scores could help mitigate this advantage, large advertisers may maintain an advantage if they conduct extensive market research or if there are a limited number of ad spaces. New advertisers or advertisers with small budgets may have difficulty competing for ad spaces under such circumstances, and consumers searching for a particular product may continuously see ads from the same advertiser.

Consumer Data in Federal Antitrust Cases

The Department of Justice (DOJ) Antitrust Division and the Federal Trade Commission (FTC) enforce federal antitrust laws. These agencies are revising their merger guidelines. On January 18, 2022, in their request for information, the agencies asked how the guidelines should “analyze mergers involving data aggregation as an important motive and/or effect” in digital markets.

In some of their antitrust lawsuits, the DOJ Antitrust Division and FTC have expressed concern about the amount of consumer data held by companies. For example, in its lawsuits against Google, the DOJ Antitrust Division alleges that Google maintained its dominance in ad tech and search services using the large amount of user data it has obtained, as well as engaging in anticompetitive conduct. For more information about Google's ad tech and allegations of its anticompetitive behavior, see CRS Report R47018, *Stop the Presses? Newspapers in the Digital Age*, by Dana A. Scherer and Clare Y. Cho.

Concluding Remarks

It is not necessarily anticompetitive for a company to have a large amount of consumer data. A company might have large amounts of data because it attracted numerous customers or users. However, companies can obtain large amounts of data using anticompetitive methods. For example, a company might be able to use its market power to obtain certain data or prevent others from obtaining it.

Some data might be valuable for a short period, and other data might help companies develop a detailed profile of their users. Companies arguably do not have an incentive to limit or prevent others from obtaining consumer data because it is *nonrivalrous*—that is, the value of data to one firm does not diminish because more companies have access to the data. However, in some instances, limited access to data can serve as a barrier to entry. Furthermore, companies with large amounts of consumer data may have a competitive advantage over others. This advantage may be heightened if restrictions are placed on the future collection of consumer data but not on the use of data already obtained.

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