

GOOGLE ADVERTISING TOOLS (FORMERLY DOUBLECLICK) OVERVIEW

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Millions of advertisers use Google marketing tools to place ads alongside Google services, search results, or on third party websites. Google also leverages its vast stores of user data to provide advertisers with sophisticated – and often uncanny – insights into their ads' performance.

KEY ADVERTISER-FACING PRODUCTS

Google Marketing Platform, previously known as DoubleClick, is Google's premium advertiser-facing product. Google acquired DoubleClick in 2007 for \$3.1 billion, more than \$1 billion over the seller's valuation.¹ At the time, DoubleClick was a leading provider of display ads to popular third party sites like AOL, MySpace, and the Wall Street Journal.² In 2018, Google unified DoubleClick's advertiser tools and its enterprise analytics product under the Google Marketing Platform brand.³

As a part of the 2018 rebranding, Google also rechristened its products that allowed web publishers to sell advertising space, formerly known as DoubleClick for Publishers and DoubleClick Ad Exchange. Although these products are now branded as Google Ad Manager, DoubleClick code still appears on 4.5 million websites.⁴

Google Marketing Platform vs. Google Ads

Google Marketing Platform is the premium counterpart to Google's flagship ad purchasing platform, Google Ads (formerly known as AdWords). AdWords began as an outgrowth of Google's search monopoly, placing ads alongside search results and allowing advertisers to target their ads to specific search terms.⁵ Launched in 2000 with 350 customers, the service was Google's flagship advertising property.⁶ The service now places ads across Google services and on the more than two million third party websites that sell ads through Google.⁷

Google refers to its own domains and the third party sites that sell ads through Google Ad Manager and AdSense (its sales platform for small publishers) as the Google Display Network.⁸ According to Google, more than 90 percent of worldwide internet users interact with Display

¹ <http://www.nytimes.com/2007/04/14/technology/14DoubleClick.html>,

<http://www.nytimes.com/2007/04/04/business/media/04adco.html>

² <http://www.nytimes.com/2007/04/14/technology/14DoubleClick.html>

³ <https://www.blog.google/technology/ads/new-advertising-brands/>

⁴ <https://archive.fo/xnpse>, <https://policies.google.com/technologies/types>

⁵ <https://www.theguardian.com/media/2010/oct/25/advertising-google-adwords>

⁶ <https://www.theguardian.com/media/2010/oct/25/advertising-google-adwords>

⁷ <https://support.google.com/google-ads/answer/2404191>

⁸ <https://support.google.com/google-ads/answer/2404190>

Network sites.⁹ Both Google Ads and Google Marketing Platform customers can access Display Network inventory. Google Marketing Platform customers access the Display Network through a "sales channel" called Authorized Buyers, formerly known as DoubleClick Ad Exchange for buyers.¹⁰

Table 1: Key Google Advertising Products

Product Name	Pre-2018 Name	Audience	Description
Google Marketing Platform	DoubleClick advertiser tools and Google Analytics 360	Premium advertisers	Tools to help large advertisers target ads, automate bidding on ad exchanges, and track conversions
Google Ads	AdWords	Small advertisers	A marketplace to buy advertising space on the Google Display Network, which includes more than 2 million third party domains in addition to Google sites and apps.
Google Ad Manager	DoubleClick for Publishers and DoubleClick Ad Exchange	Premium publishers	Premium tools for third-party publishers in the Google Display Network to sell advertising space on their websites and apps
Authorized Buyers	DoubleClick for buyers	Premium advertisers	A tool for Google Marketing Platform customers to buy ads on the Google Display Network (via the Google Ad Manager exchange), AdMob, and AdSense
AdSense	AdSense	Small web publishers	A tool for third party publishers to sell advertising space on their websites

Whereas Google Ads targets small businesses, Google Marketing Platform is intended for major advertisers and agencies that manage large advertising campaigns.¹¹ Google Marketing Platform offers advertisers more advanced targeting, analytics and campaign management tools.¹² AdWords advertisers must spend more time identifying the groups of users that they wish to target and managing bids, although Google does allow AdWords customers to

⁹ <https://support.google.com/google-ads/answer/117120>

¹⁰ <https://support.google.com/authorizedbuyers/answer/9070822>

¹¹ <https://www.blog.google/technology/ads/new-advertising-brands/>

¹² <https://support.google.com/authorizedbuyers/answer/6136272>

automate parts of this process.¹³

Both Google Marketing Platform and Google Ads sell advertising space using an auction model, where advertisers set a cost-per-impression that they are willing to pay for the space.¹⁴

Google Marketing Platform automatically matches ads to viewers and sells display space to the advertiser with the highest bid.¹⁵ AdWords awards ad space based on “ad rank,” which is a combination of the bid set by the advertiser, Google's assessment of the relevance of the ad to the customer, and “ad quality,” determined by the ad’s click-through history and “expected impact.”¹⁶

Google Ad Manager vs. AdSense

Google Ad Manager (previously DoubleClick Ad Exchange) is the premium version of Google's flagship ad sales product, AdSense. Both products allow publishers to market advertising space to Google Marketing Platform and Google Ads customers. Websites that use AdSense and Google Ad Manager have access to the same advertisers, but Ad Manager grants publishers more control over the ads that appear on their sites.¹⁷

Regardless of whether Google serves an ad to a site through AdSense or through Google Ad Manager, all websites that display ads through Google contain a tracking cookie, a tiny text file that follows users across the internet.¹⁸ When a user visits a site that serves ads using Google technology, the site places a cookie on their browser.¹⁹ The cookie identifies the browser and keeps track of the sites that it visits, the ads that it sees, and how the user interacts with webpages.²⁰ As of June 2016, Google stores this browsing data in signed-in users’ accounts, creating a persistent record of browsing data that can be triangulated with a user’s personal information.²¹

Google Ad Manager also includes a service formerly known as DoubleClick for Publishers, which allows publishers to run their own ad servers.²² Google offers the service for free for small publishers. Once publishers reach between 90 and 200 million impressions per month

¹³ <https://support.google.com/google-ads/answer/2497941>, <https://support.google.com/google-ads/answer/2979071>

¹⁴ <https://support.google.com/authorizedbuyers/answer/6077702>, <https://support.google.com/google-ads/answer/1704431>

¹⁵ <https://support.google.com/authorizedbuyers/answer/6077702>

¹⁶ <https://support.google.com/adwords/answer/142918>, <https://support.google.com/google-ads/answer/1752122>

¹⁷ <https://support.google.com/admanager/answer/4599464>

¹⁸ <https://support.google.com/adsense/answer/7549925>

¹⁹ <https://support.google.com/adsense/answer/7549925>,
<https://support.google.com/admanager/answer/2839090>

²⁰ <https://support.google.com/adsense/answer/7549925>,
<https://support.google.com/admanager/answer/2839090>

²¹ <https://policies.google.com/technologies/types>, <https://support.google.com/adsense/answer/2839090>

²² <https://support.google.com/admanager/answer/6022000>

(depending on their country of residence), they must upgrade to the paid service.²³

MARKET SHARE

More than 47.6 percent of the top 10,000 websites use DoubleClick ad-serving code, and another 40.8 percent use AdSense.²⁴ While a handful of publishers use both technologies, most use one or the other, suggesting that Google may be present on well over 80 percent of top domains.

Google also commands the largest market share in digital advertising overall, with nearly twice the market share of its nearest competitor, Facebook.²⁵ In 2019, Google is projected to earn more than \$103.7 billion in global advertising revenue.²⁶ Facebook is projected to earn just \$67.4 billion over the same period.²⁷ No other digital ad platform has a market share of more than 7 percent.²⁸

Google limits third party tracking technology on its advertising platform.²⁹ Google's tracking policies mean that advertisers who serve ads through both AOL and Google, for example, cannot use AOL's technology to see how their ads perform across both networks.³⁰ Under the guise of compliance with GDPR, Google further restricted third party pixels on its ad network in 2018.³¹ Google Marketing Platform customers who want consistent data about ad performance must manage all of their campaigns through Google.

GOOGLE ADVERTISING AND USER DATA

Google's restrictions on third party trackers serve as tacit acknowledgement that user data is the key component of Google's success as an advertising company. Tracking cookies, present on any site that serves Google ads, allow the company to observe the browsing habits of more

²³ <https://www.google.com/DoubleClick/publishers/small-business/terms/>. The impression limit for free ad serving is 90 million for publishers based in United States, Canada, Australia, or New Zealand; 200 million impressions for publishers located in the Russian Federation, Slovakia, Czech Republic, Greece, Slovenia, Lithuania, Romania, Poland, Ukraine, Hungary, Croatia, Bosnia and Herzegovina, Cyprus, Kenya, Morocco, Estonia, Latvia, Bulgaria, Turkey, Lebanon, Israel, United Arab Emirates, Saudi Arabia, Egypt, South Africa, Mexico, Argentina, Chile, Columbia, Guatemala, Uruguay, Peru, India, Taiwan, Malaysia, Korea, Hong Kong, Indonesia, Pakistan, Thailand, Philippines, China, Vietnam, Bangladesh, or Sri Lanka; and 150 million impressions per month for publishers located in all other countries.

²⁴ <https://archive.fo/We2r9>

²⁵ <https://www.emarketer.com/content/us-digital-ad-spending-will-surpass-traditional-in-2019>

²⁶ <https://www.emarketer.com/content/global-digital-ad-spending-2019>

²⁷ <https://www.emarketer.com/content/global-digital-ad-spending-2019>

²⁸ <https://www.emarketer.com/content/us-digital-ad-spending-will-surpass-traditional-in-2019>

²⁹ <https://support.google.com/adspolicy/answer/94230>, <https://support.google.com/google-ads/answer/6161966>

³⁰ <https://digiday.com/media/google-dmp-rules/>

³¹ <https://adage.com/article/digital/google-shuts-roi-tracking-analysis/313836>

than 90 percent of people who use the internet.³² Google combines that data with users' personal profile information to create 'super profiles' that afford the company unparalleled ad targeting capabilities. Google notes to advertisers that "Only Google can deliver this level of precision and scale."³³

Google places tracking cookies on the browser of any user that visits a webpage that serves Google ads, uses Google Analytics, or contains embedded Google services like YouTube.³⁴ Once a user visits a site with a Google tracking cookie, the cookie stores a constantly-updated record of the user's web activity on their browser.³⁵

Although the cookie tracks everything that a user queries, clicks on, and reads online, Google maintains that its cookies contain no personally identifiable information.³⁶ Google does, however, associate these cookies with personal information in users' Google profiles, including email metadata, signed-in search and YouTube viewing history, location data from their Android phones or other mobile devices signed in to Google services, and the contents of files stored on Google's servers.³⁷ The result is a 'super-profile' that grants Google unparalleled insight into users' interests and habits.³⁸

A Brief History of Google's Growing Appetite for User Data

Google began combining DoubleClick advertising cookie data and personal profile information following a change to its privacy policy in June 2016. Google presented the change to users as a "new feature," failing to disclose the fact that the change made users' browsing histories personally identifiable.³⁹ The change realized the fears that privacy advocates voiced during Google's acquisition of DoubleClick in 2007:

The combination of DoubleClick's Internet surfing history generated through consumers' pattern of clicking on specific advertisements, coupled with Google's database of consumers' past searches, will result in the creation of 'super-profiles,' which will make up the world's single largest repository of both personally and non-personally identifiable information.⁴⁰

The FTC declined to intervene in privacy issues surrounding the acquisition, arguing that "the Commission lack[s] legal authority to require conditions to this merger that do not relate to antitrust."⁴¹ Regarding the competitive advantage that Google would gain from having access

³² <https://support.google.com/adwords/answer/2404190>, <https://policies.google.com/technologies/partner-sites>

³³ <https://adwords.googleblog.com/2016/09/New-Digital-Innovations-to-Close-the-Loop-for-Advertisers.html>

³⁴ <https://policies.google.com/technologies/partner-sites>, <https://policies.google.com/technologies/ads/>

³⁵ <https://support.google.com/adsense/answer/7549925>

³⁶ <https://support.google.com/adsense/answer/7549925>

³⁷ <https://www.google.com/policies/privacy/>

³⁸ http://www.consumerwatchdog.org/resources/ftc_google_complaint_12-5-2016docx.pdf

³⁹ <https://www.propublica.org/article/google-has-quietly-dropped-ban-on-personally-identifiable-web-tracking>

⁴⁰ <https://epic.org/privacy/ftc/google/cpb.pdf>

⁴¹ https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf

to user data contained in the DoubleClick tracking cookie, the Commission cited Google's informal commitments to honor preexisting contracts that granted publishers the exclusive right to that data.⁴²

In fact, Google did not honor that commitment for long. As of 2016, the company's policies for publishers that show display ads stipulated that Google has an equal right to user data acquired through the DoubleClick cookie:

Subject to any applicable laws, rules and regulations, you will have the sole and exclusive right to use all data derived from your use of the DoubleClick cookie for any purpose related to your business, **provided that Google may use and disclose this data** subject to the terms of Google's advertising privacy policies and any applicable laws, rules and regulations.⁴³ [emphasis added]

By 2017, Google removed any language about publishers' rights to data derived from Google advertising cookies.⁴⁴

Google also grants itself rights to user data beyond what it allows publishers. Another clause in Google's terms of service prevents advertisers and publishers from combining advertising cookie data with personally identifying information, even as it does so itself:

You may not associate cookies, web beacons, or other tracking mechanisms with personally-identifiable information (PII) for any purpose or with precise user location for behavior targeting unless the user has knowingly and expressly opted in.⁴⁵

In effect, Google grants itself the exclusive right to associate browsing data with personally-identifiable information stored in users' profiles and with precise location data from users' mobile phones. This policy protects Google's singular ability to profile users and sell ads against that information.

Associating browsing data with users' profiles allows Google to monitor users across devices. In September 2016, less than three months after the privacy policy change that combined DoubleClick tracking cookies with personal profile information, Google announced a new set of services that allow advertisers to "close the loop" with cross-device remarketing.⁴⁶ For example, Google can now determine which signed-in users saw an ad on their phone and purchased the advertised product on their desktop computer.⁴⁷

Cross-device remarketing renders account logins as important to Google's advertising strategy

⁴² https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf

⁴³ <https://web.archive.org/web/20161122001923/https://support.google.com/adsense/answer/48182>

⁴⁴ <https://web.archive.org/web/20171115214404/https://support.google.com/adsense/answer/48182>

⁴⁵ <https://support.google.com/adwordspolicy/answer/94230>

⁴⁶ <https://adwords.googleblog.com/2016/09/New-Digital-Innovations-to-Close-the-Loop-for-Advertisers.html>

⁴⁷ <https://support.google.com/analytics/answer/7532985>

as cookies.⁴⁸ In 2014, one Google insider told a reporter, “What Google really wants is for everybody to be signed in to their Google accounts all the time.”⁴⁹ When a user signs on to any Google service, such as Gmail, YouTube, or Search, Google associates the browsing history stored in the DoubleClick tracking cookie with their profile.⁵⁰ Once a user signs in to a Google service, they remain signed in on that browser until they affirmatively sign out. As long as the user remains signed in, Google continues to collect browsing data in real time. When a signed-in user visits a site with Google tracking technology, it joins a user identifier with the site’s own traffic data.⁵¹ This allows Google to show re-target the same user across platforms and devices.

This makes Gmail, Google’s core authenticated service, essential to its advertising ecosystem. Although Google stopped its longtime practice of scanning the contents of users’ emails for keywords to augment their advertising profiles in 2017, Gmail logins remain a critical gateway to personally-identifiable browsing histories.⁵² More than 1.5 billion people sign in to Gmail every month.⁵³ When a those users sign in to their accounts, data from the DoubleClick tracking cookie stored in their browsers is associated with their private user profiles.

Google also exploits single sign on (SSO) to monitor signed-in users. When a user signs into Gmail or any other Google service, they are automatically logged in to all other Google services, including YouTube, Google Drive, Google Docs, and Search. There is no way to untie these services.⁵⁴ Google automatically stores signed in users’ search histories, You Tube viewing habits, email metadata, and Google Drive contents in their advertising profiles.⁵⁵ In 2018, Google quietly pushed an update to Chrome that signed users in to the browser whenever they signed in to a Google service.⁵⁶ An outcry from privacy advocates prompted Google to allow users to opt-out of the forced sign-in policy, but the setting remains activated by default.⁵⁷

Google closes the loop by requiring users to sign on to their Google accounts from their mobile devices, too. Android phones prompt users to log in to a Google account during device setup.⁵⁸ If a user bypasses that step, they will be unable to use most Google apps, including the Google Play store, the primary gateway to third-party Android apps.⁵⁹ As a result, virtually all Android phones in the United States and Europe are associated with a Google Account. Once Android

⁴⁸ <https://techcrunch.com/2016/09/26/google-ads/>

⁴⁹ <https://qz.com/194032/googles-sneaky-new-privacy-change-affects-85-of-iphone-users-but-most-of-them-wont-have-noticed/>

⁵⁰ <https://support.google.com/adsense/answer/7549925>, <https://support.google.com/dcm/answer/2839090>

⁵¹ <https://support.google.com/google-ads/answer/2453998>

⁵² <https://www.nytimes.com/2017/06/23/technology/gmail-ads.html>

⁵³ <https://twitter.com/gmail/status/1055806807174725633>

⁵⁴ <https://googleblog.blogspot.com/2012/01/updating-our-privacy-policies-and-terms.html>

⁵⁵ <https://venturebeat.com/2014/10/06/the-cookie-is-dead-heres-how-facebook-google-and-apple-are-tracking-you-now/>

⁵⁶ <https://techcrunch.com/2018/09/24/security-experts-say-chrome-69s-forced-login-feature-violates-user-privacy/>

⁵⁷ <https://techcrunch.com/2018/09/26/google-to-give-chrome-users-an-opt-out-to-forced-login-after-privacy-backlash/>

⁵⁸ <http://www.itworld.com/article/2832391/mobile/can-an-android-phone-run-without-google-.html>

⁵⁹ <https://support.google.com/googleplay/answer/2521798>

users are signed in, Google tracks their location, activity level, searches, voice commands, and use apps and services.⁶⁰ Google associates all of this information with users' private accounts and uses it for ad targeting.⁶¹ In addition, Google tracks Android users with a unique Advertising ID – the mobile equivalent of browser-based tracking cookies.⁶² Both of these technologies allow advertisers to target users as they switch between their computers and their Android phones.

Thanks to the success of Google apps for iOS, many Apple users also log on to their Google accounts from their mobile devices. Google Search, Gmail, YouTube, Google Drive, Chrome, and Google Maps for iPhone and iPad all prompt users to sign in to their Google accounts. In 2014, Google introduced single sign-on for iOS, so when a user signs in to one Google app on their mobile device, they are automatically signed in to all of their Google apps.⁶³ By default, these apps track location history and store that information in users' Google accounts.⁶⁴ This allows Google to track iOS users much like it tracks Android users, and to associate that information with users' accounts and activity on other devices.⁶⁵

User Data and Ad Targeting

Google uses the 'super profiles' created by combining users' personal information with cross-device browsing data to sell hyper-targeted advertising to Google Marketing Platform and Google Ads customers. The company combines these profiles with other data sources to serve "relevant" ads. Google allows customers to target advertising based on the following criteria:

Context

Both Google Marketing Platform and Google Ads (formerly DoubleClick and AdWords) allow advertisers to target ads based on the contents of the webpage on which the ad will appear.⁶⁶ Google classifies pages into topics by automatically scanning the words on the page and classifying them using artificial intelligence.⁶⁷ The company then sorts pages into one of over 2,200 predetermined topics according to the best content match, and advertisers choose which of these topics to target.⁶⁸ Google encourages advertisers to create "ad groups" that

⁶⁰ <https://digiday.com/media/brands-normals-know-googles-new-activity-pages/>

⁶¹ <https://www.theverge.com/2016/6/1/11824118/google-android-location-data-police-warrants>

⁶² <http://www.techrepublic.com/article/pro-tip-how-to-opt-out-of-interest-based-ads-on-your-android-phone/>

⁶³ <https://gmail.googleblog.com/2014/03/get-your-mail-faster-on-gmail-ios-app.html>

⁶⁴ <https://support.google.com/accounts/answer/4388034>

⁶⁵ <https://qz.com/194032/googles-sneaky-new-privacy-change-affects-85-of-iphone-users-but-most-of-them-wont-have-noticed/>, <https://venturebeat.com/2014/08/17/yes-google-maps-is-tracking-you-heres-how-to-stop-it/>

⁶⁶ <https://support.google.com/authorizedbuyers/answer/2873487>,

<https://support.google.com/google-ads/answer/2497832>

⁶⁷ <https://support.google.com/adsense/answer/32844>

⁶⁸ <https://support.google.com/authorizedbuyers/answer/2873487>,

<https://developers.google.com/adwords/api/docs/appendix/verticals>

correspond with the products that the advertiser sells and to seed these groups with 5-20 relevant keywords.⁶⁹

Google Ads and Google Marketing Platform also allow advertisers to build lists of keywords to match ads to user-submitted search terms.⁷⁰ Google offers a "smart campaigns" feature that automatically assigns keywords based on an advertiser-defined product or service.⁷¹ Advertisers can also register 'negative keywords' to prevent their ads from being served next to certain terms.⁷²

Viewer interests

Google draws upon its vast stores of user data to serve ads based on the end user's interests, as determined by their prior browsing data, location history, past searches, social graph, YouTube viewing history, Google Home interactions, and content uploaded to Google services.⁷³ Both Google Ads and Google Marketing Platform offer two options for interest-based targeting: "affinity audiences" and "in-market audiences."⁷⁴

Affinity audiences draw upon users' personal data to infer broad interests and tendencies like "Frequently eats breakfast out," "Convenience store shoppers," and "Home automation enthusiasts."⁷⁵ Advertisers can select which of these groups they would like to target with a particular ad or campaign. Google reveals the affinity audiences to which a user belongs on an ads personalization page associated with their account, but it does not show the underlying data that allows it to infer the user's interests and habits.⁷⁶

Google also allows advertisers to create "custom affinity audiences" by identifying keywords that appear in users' browsing history, websites that they have viewed, apps that they have used, and even physical locations that they have visited.⁷⁷ The company does not appear to disclose any information to end users about how their personal information was used to create custom affinity audiences.

⁶⁹ <https://support.google.com/google-ads/answer/2453986>

⁷⁰ <https://support.google.com/searchads/answer/1187512>, <https://support.google.com/google-ads/answer/1722047>

⁷¹ <https://support.google.com/google-ads/answer/7653460>

⁷² <https://support.google.com/google-ads/answer/1704371>

⁷³ <https://support.google.com/google-ads/answer/2497941>

⁷⁴ <https://support.google.com/google-ads/answer/2404239>,
<https://support.google.com/displayvideo/answer/2949947>

⁷⁵ <https://support.google.com/displayvideo/answer/6021489>, <https://support.google.com/google-ads/answer/2497941>

⁷⁶ <https://adssettings.google.com>

⁷⁷ <https://support.google.com/google-ads/answer/2497941>,
<https://support.google.com/displayvideo/answer/7583366>

In-market audiences also rely on interest categories to help advertisers target their campaigns.⁷⁸ The key difference is that the interest categories for in-market targeting focus on something that the user already wants to buy, rather than things that the user likes but may not be shopping for. Google identifies in-market audiences by analyzing “trillions of search queries and activity across millions of websites to help figure out when people are close to buying.”⁷⁹

Google's advertising customers can also create "custom intent audiences" to identify users who are in the market for specific items.⁸⁰ As with custom affinity audiences, advertisers can use keywords and URLs that appear in users' browsing histories to build custom intent audiences.⁸¹ Google also uses machine learning to suggest custom intent audiences based on user activity; if an advertiser targets users in the market for sporting goods, Google will suggest product searches made by users of sporting goods websites.⁸²

Life Events

Google analyzes user activity to identify individuals who experience major life changes like getting married, graduating from college, moving, or a new baby.⁸³ According to Google, this allows advertisers to target individuals who are in the market for a variety of complimentary goods and services.⁸⁴ Google does not disclose the data that it uses to identify users who are experiencing a major life event, nor does it appear to disclose users' inclusion on life event marketing lists to the end user.

Demographics

Google allows Google Ads and Google Marketing Platform advertisers to target ads based on demographics.⁸⁵ This includes not just basic demographics like age and gender, but also household income, education level, employer size, employer industry, homeownership status, marital status, parental status, and children's ages.⁸⁶

⁷⁸ <https://support.google.com/displayvideo/answer/6213232>, <https://support.google.com/google-ads/answer/2497941>

⁷⁹ <https://adwords.googleblog.com/2017/05/powering-ads-and-analytics-innovations.html>

⁸⁰ <https://support.google.com/google-ads/answer/9069938>,
<https://support.google.com/displayvideo/answer/7583366>

⁸¹ <https://support.google.com/google-ads/answer/9069938>,
<https://support.google.com/displayvideo/answer/7583366>

⁸² <https://support.google.com/google-ads/answer/9069938>

⁸³ <https://support.google.com/google-ads/answer/2497941>,
<https://support.google.com/displayvideo/answer/6260055>, <https://www.thinkwithgoogle.com/advertising-channels/video/automotive-brand-loyalty/>

⁸⁴ <https://support.google.com/google-ads/answer/2497941>

⁸⁵ <https://support.google.com/google-ads/answer/2497941>, <https://support.google.com/google-ads/answer/2580383>, <https://support.google.com/displayvideo/answer/6071542>

⁸⁶ See spreadsheet at <https://support.google.com/google-ads/answer/2497941>

While Google asks for users' age and gender when they sign up for an account, it infers the most useful demographic information from tracking users across the web. Google determines demographics by tracking what users search for, click on, buy, and view across the web and on their mobile devices, and infers characteristics based on those behaviors.⁸⁷ The company also compares each user's browsing history to the browsing histories of survey participants to determine parental status, income, and other demographic information.⁸⁸ Once the company knows how a sample of people in a particular demographic group behave on the internet, it can infer demographics *en masse* using nothing but browsing behavior.

Remarketing

Google's advertising customers can also target users who have engaged with the advertiser's business in the past.⁸⁹ Advertisers place a snippet of Google code called a "global site tag" on their websites.⁹⁰ The code automatically adds visitors to "remarketing lists" for future ad targeting.⁹¹ Google provides advertisers with an "audience insights" report that lists the demographics, locations, devices, and interests of users on the advertiser's remarketing list.⁹²

Similar Audiences

Both Google Ads and Google Marketing Platform advertisers can target "similar audiences" who share characteristics with people who have already patronized their businesses.⁹³ Google analyzes the most recent 30 days of browsing activity for all of the customers on an advertiser's remarketing list to determine their interests and characteristics.⁹⁴ The company then draws upon its detailed user profiles to find other users who have displayed similar interests and characteristics in their browsing activity or other data that Google collects, and adds these individuals to a custom "similar audiences" list.⁹⁵

⁸⁷ <https://support.google.com/google-ads/answer/2580383>

⁸⁸ <https://www.wordstream.com/blog/ws/2014/06/20/adwords-parental-status>

⁸⁹ <https://support.google.com/google-ads/answer/2453998>

⁹⁰ <https://support.google.com/google-ads/answer/2476688>,
<https://support.google.com/displayvideo/answer/7562276>

⁹¹ <https://support.google.com/google-ads/answer/2476688>

⁹² <https://support.google.com/google-ads/answer/3726570>

⁹³ <https://support.google.com/google-ads/answer/2676774>,
<https://support.google.com/displayvideo/answer/6021500>

⁹⁴ <https://support.google.com/google-ads/answer/2676774>

⁹⁵ <https://support.google.com/google-ads/answer/2676774>

Location and Language

Google strongly encourages advertisers to target their ads to the viewer's location:

When it comes to advertising on AdWords, consider the real estate adage: "Location, location, location!" Regardless of how great your ad is, it probably won't perform as well if it doesn't appear in the right places.⁹⁶

Google Ads and Google Marketing Platform customers can target ads to users in a particular country, region, radius around a specific location, or near specific business addresses.⁹⁷

Google determines user location through the IP address on their device, GPS, nearby Wi-Fi networks, Bluetooth signals, and cell tower location.⁹⁸ Google repeatedly queries users' devices for this information whenever they use an Android phone, use Google apps (Like Waze and Google Maps) with location services enabled, or visit a website on the Google Display Network.⁹⁹ As a result, Google collects location data on users continually, forming a super-profile of users' habitual movements that simultaneously refines and updates Google's location database. From this position, Google is able to observe every instance leading up to a purchase and market it as potential ad space. Google refers to this proprietary location data - covering the entire purchasing lifecycle - as a series of "Micro-Moments."¹⁰⁰

Google's advertising products don't just target ads based on where users are at a particular moment. Google also analyzes past behavior to determine "locations of interest" where the user is likely to be in the future.¹⁰¹ Google determines locations of interest by storing search terms that indicate location, past physical locations, visits to websites that indicate location, Google Maps searches, and custom location settings in its user profiles.¹⁰²

Google Ads and Google Marketing Platform customers can also target their ads based on language.¹⁰³ Google determines users' language based on their settings in Google Services (like search and Gmail) and their browsing history across the web.¹⁰⁴ Google may serve ads in the user's inferred language even when they are viewing a page written in a different language.¹⁰⁵

⁹⁶ <https://support.google.com/google-ads/answer/1722043>

⁹⁷ <https://support.google.com/google-ads/answer/1722043>,
<https://support.google.com/displayvideo/answer/2705812>

⁹⁸ <https://support.google.com/google-ads/answer/2453995>

⁹⁹ <https://policies.google.com/privacy>, <https://support.google.com/accounts/answer/3118687>

¹⁰⁰ <https://think.storage.googleapis.com/docs/micromoments-guide-to-winning-shift-to-mobile-download.pdf>

¹⁰¹ <https://support.google.com/google-ads/answer/2453995>

¹⁰² <https://support.google.com/google-ads/answer/2453995>

¹⁰³ <https://support.google.com/google-ads/answer/1722078>,
<https://support.google.com/displayvideo/answer/2697406>

¹⁰⁴ <https://support.google.com/google-ads/answer/1722078>

¹⁰⁵ <https://support.google.com/google-ads/answer/1722078>

User Data and Conversion Tracking

Google also analyzes the behavior of users who visit an advertiser's site in order to provide information about ad performance. Traditionally, this meant tracking "conversions" like site visits, online purchases, or signing up for an advertiser's mailing list. Google also draws upon its repository of user data to provide uncanny insights into physical store visits and offline sales.

Website actions

Google provides Google Ads and Google Marketing Platform customers with source code that helps them track whether a customer who was referred by an ad made a purchase, signed up for a mailing list, clicked on a referral link, downloaded a file, clicked on the advertiser's phone number, or made a payment on a third-party page.¹⁰⁶ Websites with this code place a cookie on the user's browser that Google then uses to document users' behavior both on the advertiser's site and, if applicable, on third party sites relevant to a purchase, download, or subscription enrollment.¹⁰⁷

Phone calls

Google gives advertisers source code that routes phone calls to a number displayed on an advertiser's website through a google forwarding number in order to capture phone call conversions.¹⁰⁸ Google also allows Google Marketing Platform advertisers to import call logs to identify the phone calls that were initiated by viewing an ad.¹⁰⁹ In addition, Google uses website action tracking to track clicks on a phone number on a mobile website.¹¹⁰

App downloads and in-app purchases

Google also tracks app downloads that follow ad clicks on a mobile device. Developers who use Google's Firebase development platform, which serves both iOS and Android, can add tracking code to monitor first-opens and in-app purchases originating from an ad served by Google.¹¹¹ Android Apps sold on the Google Play store automatically associate app downloads and in-app purchases with Google Ads and Google Marketing Platform ad clicks, without the developer adding any code to their app.¹¹²

¹⁰⁶ <https://support.google.com/google-ads/answer/1722022>,
<https://support.google.com/displayvideo/answer/2997485>

¹⁰⁷ <https://support.google.com/google-ads/answer/1722022>,
<https://support.google.com/authorizedbuyers/answer/166192>

¹⁰⁸ <https://support.google.com/google-ads/answer/6095883>, <https://developers.google.com/search-ads/v2/how-tos/conversions>

¹⁰⁹ <https://support.google.com/google-ads/answer/6301373>

¹¹⁰ <https://support.google.com/google-ads/answer/6100664>

¹¹¹ <https://support.google.com/google-ads/answer/6100665>

¹¹² <https://support.google.com/google-ads/answer/6100665>,
<https://support.google.com/authorizedbuyers/answer/4539625>

Imported conversions

Google allows advertisers to import sales data associated with Google's unique ad click ids back into the Google Ads and Google Marketing Platform systems.¹¹³ Google then associates these click ids with user data in order to tell the advertiser which keywords, queries, and user interests are associated with sales.¹¹⁴

Cross-device conversions

Google now provides advertising customers with detailed information about the 'paths' that users take between viewing an ad and making a conversion, even if the conversion happens on a different device than the one that served the ad.¹¹⁵ In order to provide this information, Google identifies and tracks users across all of their devices, going far beyond the browser-based tracking cookies that power traditional interest-based advertising. By combining browsing and web activity data into a user's Google account, the company can determine which signed-in users saw an ad on one device and purchased the advertised product on another.¹¹⁶ The company has also filed a patent application that could allow it to track signed-out users by passing a temporary tracking code between devices for the purposes of cross-device remarketing and conversion tracking.¹¹⁷

Data-driven attribution

While "last-click" conversions capture a significant portion of all online conversions, Google relies on machine learning and the company's vast stores of user data to assess the impact of each element of an advertiser's campaign on the likelihood of conversion.¹¹⁸ Google now offers a "data-driven attribution" product, which compares the "click paths" of customers who convert to the paths of customers who don't to identify inflection points that impact the purchasing decision.¹¹⁹

Store visits

Google can also tell DoubleClick and AdWords customers whether users have visited their physical stores. By combining its constant queries of mobile users' locations with detailed maps of commercial buildings, Google boasts that it can determine with 99 percent accuracy whether

¹¹³ <https://support.google.com/google-ads/answer/2998031>,
https://developers.google.com/DoubleClick-advertisers/guides/conversions_upload

¹¹⁴ <https://support.google.com/google-ads/answer/2998031>

¹¹⁵ <https://support.google.com/google-ads/answer/6359141>,
<https://support.google.com/marketingplatform/answer/6292532>

¹¹⁶ <https://support.google.com/google-ads/answer/6359141>

¹¹⁷ <http://pdfaiw.uspto.gov/.aiw?Docid=20160234203>

¹¹⁸ <https://adwords.googleblog.com/2017/05/powering-ads-and-analytics-innovations.html>,
<https://support.google.com/analytics/answer/3264076>

¹¹⁹ <https://support.google.com/google-ads/answer/6394265>

a customer has visited an advertisers' store.¹²⁰ Google matches user locations to the ads that the user has seen, and reports back to advertisers within 48 hours of a store visit.¹²¹ Google validates this data by comparing the behavior of survey respondents to the rest of its user base. Through sensors on users' phones and in-store wifi signals, Google can even determine which store a user visited in a multilevel mall.¹²²

Offline Sales

Google also uses machine learning and other technologies to associate ads with in-store sales. Google Ads and Google Marketing Platform customers can upload offline sales data directly to Google. Google then associates advertisers' transaction records with its own user data in order to identify purchases that were made by users who saw an ad on the Google Display Network.¹²³ Google does not disclose the exact mechanism by which it matches offline sales to user profiles, but in 2017, the company announced that it would begin using anonymized ids to match credit card purchase data from commercial data brokers with its users.¹²⁴

¹²⁰ <https://static.googleusercontent.com/media/adwords.google.com/en/us/home/marketing-goals/pdf/white-paper-bridging-the-customer-journey.pdf>

¹²¹ <https://static.googleusercontent.com/media/adwords.google.com/en/us/home/marketing-goals/pdf/white-paper-bridging-the-customer-journey.pdf>

¹²² <https://adwords.googleblog.com/2017/05/powering-ads-and-analytics-innovations.html>

¹²³ <https://support.google.com/google-ads/answer/6361305>,
<https://support.google.com/searchads/answer/3465926>

¹²⁴ <https://www.washingtonpost.com/news/the-switch/wp/2017/05/23/google-now-knows-when-you-are-at-a-cash-register-and-how-much-you-are-spending/>