

Appendix A

GOOGLE'S SUBMISSION IN RESPONSE TO SUBCOMMITTEE QUESTIONS FOR THE RECORD FOLLOWING JULY 16, 2019 HEARING

Written Questions for the Record from the Honorable David N. Cicilline

1. Please identify the average number of daily search queries submitted in the U.S. to Google Search for each quarter since 2004, broken down by:

a. Number of queries submitted on desktop; and

b. Number of queries submitted on mobile.

Providing users with the information they seek is core to our business model, our company's mission, and our success. While we don't have more detailed public metrics, we can confirm that Google Search responds to trillions of user queries from around the world every year. Our industry is highly dynamic and drives innovation that gives consumers better choices for lower costs. Thus, we've seen an increase in searches on mobile versus desktop. In fact, more than 50% of those trillions of searches we see are on mobile. They are also geographically diverse, with more than 50% of our searches coming from outside the United States. And we are constantly competing to serve our users with new information: every day, 15% of the queries we process are ones we've never seen before.

We also face robust competition from other sites on the Internet, with intense competitive pressure on us to ensure users find what they are searching for—regardless of the source. For every type of query — travel, news, local, video, images, etc. — there are many different sites competing with Google to attract users. When consumers want to search for information, they can choose from Amazon, Yelp, Microsoft, Travelocity, and many other companies that consistently report strong user growth. As an example, 55% of consumers start their product searches on Amazon, making it one of our many successful competitors. We also face formidable competition around the world, with an ever-increasing competitive environment emerging from other continents. As a result, we invest heavily in research and development to compete in a global environment with other global players. Google last year spent \$21.4 billion on research, development, and related areas, which is three times more than what we spent in 2013. We are committed to finding better

ways to connect people with the information about the world around them through Search, and fulfilling ever-growing expectations for how quickly users receive answers from digital services.

2. Please identify the average number of daily search queries submitted globally to Google Search for each quarter since 2004, broken down by:

a. Number of queries submitted on desktop; and

b. Number of queries submitted on mobile.

We are always striving and competing to serve users globally: our platforms are about sharing information everywhere, making products for everyone, and giving many different people in the world a voice. As described in response to Question No. 1, above, our users are geographically diverse. Google Search responds to trillions of user queries from around the world every year, with more than 50% of those searches coming from users outside the United States. Our competitors are similarly diverse. We face formidable competition around the world, with an ever-increasing competitive environment emerging around the globe. Our industry is highly dynamic and drives innovation that gives consumers better choices for lower costs. In addition to competitors such as Microsoft, Yelp, and Amazon, we face competitors like Bookings.com and Flipkart, and therefore invest heavily in research and development, so we can compete in a global environment with other global players.

3. Please identify the percentage of search queries per year since 2004 that have terminated on Google's search engine results page (SERP).

4. Please identify the percentage of search queries per year since 2004 that have terminated on a page with a Google domain (including on Google's SERP).

Because the answers to these questions are related, we have grouped together our response to Question Nos. 3 and 4.

Google's goal with Search is to deliver the most relevant and reliable information available to our users. Search has long sent extraordinarily large amounts of traffic to third parties, and the vast majority of click-throughs from Google's Search results page are to non-Google domains. While we don't have more detailed public metrics on search query terminations and click-throughs, we have designed Google Search to provide people with accurate and useful information, much of which is on non-Google

domains. That's because our mission, since the very beginning, has been to organize information on the web and make it universally accessible and useful.

We do not necessarily know why a user terminates their search with Google. Users' decisions are varied and based on information we cannot assess. For example, it may be that some users are dissatisfied by the answer or results and switched to an alternative, whether that is a different search engine (like Amazon, for shopping, or OpenTable, for nearby restaurants with open reservations). Others may have realized that a different search query is more likely to help them find the results they are looking for (by entering a new search query into a search bar, for example, this would mean that the original search appeared to "terminate" on Google, but, in fact, they continued to search). Others may have found what they needed. Whatever the reasons, we understand that providing users with the most useful and accurate information is the reason they will come back to use our search engine again.

5. Please identify the percentage of search queries per year since 2004 that have resulted in a click-through to a non-Google domain.

6. For each year since 2004, please identify the percentage of clicks on Google's search engine results page that have been directed to:

a. A non-Google domain; and

b. A Google-owned domain.

Because the answers to these questions are related, we have grouped together our response to Question Nos. 5 and 6.

As noted above in Question No. 4, Google has long sent extraordinarily large amounts of traffic to third parties, and the vast majority of click-throughs from Google's Search results page are to non-Google domains. While we don't have more detailed public metrics on search query terminations and click-throughs, our goal is to provide users with accurate information in a useful way, which is the reason users will come back to use Google Search again.

To better understand the search ecosystem in which we operate, it is useful to understand our mission and how Google Search works. The success of Google Search is dependent on its ability to provide the most relevant and reliable information

available, and we understand that is what users want, whether or not those results are from Google or non-Google owned domains.

Every time our users search, there are thousands, sometimes millions, of webpages with helpful information. How Google figures out which results to show starts long before we even receive a query: we organize information about webpages in our Search index. We then use software known as web crawlers to discover publicly available webpages. Crawlers look at webpages and follow links on those pages, much like you would if you were browsing content on the web. They go from link to link and bring data about those webpages back to Google's servers. When crawlers find a webpage, our systems render the content of the page, just as a browser does. We take note of key signals — from keywords to website freshness — and we keep track of it all in the Search index, which contains hundreds of billions of webpages. Our Search Algorithms are designed to sort through those billions of webpages to find the most relevant, useful results in a fraction of a second, and present them in a way that helps our users find what they are looking for, looking at factors such as the words of your query and the usability of webpages.

7. Please describe how Google currently measures the quantity of traffic it refers to other websites, through paid results and organic results.

Google currently measures the quantity of traffic it refers to other websites by logging user activity like queries and clicks, and then using tools that analyze those logs to produce aggregate metrics that, in our experience, correlate with user satisfaction with Google Search results. While these metrics may provide information about traffic that is referred to other websites, the primary purpose of our analysis is to improve Google Search's ability to provide the most relevant, accurate, and reliable information available in response to a user query.

Google is an industry leader in providing choice, transparency, control, and security for user data. At Google we believe a user should be in control of the information that is shared with Google when searching the web. As explained in more detail below in response to Question No. 97, in 2015 we initiated MyAccount (now Google Account), which lets users make informed choices about their data through easy-to-use tools designed to help manage their privacy and security, including management of their Web and App Activity. We also offer instructions to users on how to search and browse the web privately on various browsers, including Chrome, Safari, and Firefox. For more detail, see

<https://support.google.com/websearch/answer/4540094?co=GENIE.Platform%3DDesktop&hl=en>.

Google is also invested in helping website owners be discovered in Search, and we provide a suite of tools and informational resources to help drive billions of visitors to websites small and large. We offer extensive resources to all webmasters to help them succeed in having their content discovered online — including interactive websites, videos, starter guides, frequent blog posts, forums, and live expert support. Website owners and others have access to resources on the Google Webmasters site, available at https://www.google.com/webmasters/#?modal_active=none.

8. Does Google set targets for search metrics? If yes, please identify all targets and describe Google’s reason or method for setting each target.

Google’s target metric for Search is to continually improve user satisfaction by delivering the most relevant and reliable information available in response to a user query. We’re always looking for ways to improve a user’s search experience, and these improvements are largely made through experiments on various queries with feedback from our third party Search Quality Raters. These Raters are trained on and subject to extensive guidelines (available at <https://static.googleusercontent.com/media/guidelines.raterhub.com/en//searchqualityevaluatorguidelines.pdf>). Rater feedback helps us understand what changes make Search more useful and to categorize information to improve systems.

Google faces stiff competition worldwide and constantly competes to provide our users with the best and most current information. Every day, 15% of the queries we process are ones we’ve never seen before so our search capabilities must evolve constantly to benefit our users, fulfill our mission, and compete in the digital marketplace. For that reason, we invest heavily in research and development of Search. This includes conducting over 500,000 search quality tests and thousands of search traffic experiments in 2018 alone. Our Search Quality Raters are heavily involved in these experiments. This work led to over 3,000 launches devoted to improving the quality of Google Search so that our users can find what they are looking for. Google remains dedicated to its mission to organize the world’s information and make it universally accessible and useful, and we will continue our efforts to improve Google Search to meet that goal.

9. Please describe Google’s current policy on copying or scraping content from third parties.

Google is committed to leading on transparency and consistent with that goal, we provide our policies regarding how we create our Google Search index and a detailed description of how Google Search works on our “How Search Works” site, at <https://www.google.com/search/howsearchworks/> and our Search Console Help Center, at: <https://support.google.com/webmaster/s#topic=9128571>. As those sites describe, Google Search operates by building an index of the World Wide Web so that users can be offered links to content relevant to their queries. In general, if a web page is publicly available and found by our crawlers, and configured to provide information to Google, we will download that information and include it in our index. When doing so, we always identify ourselves as “Googlebot,” allowing webmasters to exercise control at the point of crawling.

Google respects industry-standard controls by which webmasters can tell Google not to crawl their content (via robots.txt, see <https://support.google.com/webmasters/answer/6062608>), and not to index it (via the “noindex” directive, see <https://support.google.com/webmasters/answer/93710>). We also offer a number of granular controls allowing webmasters to specify that Google should not use certain content or use it only in certain ways. For example:

- Webmasters can specify that their data should not be included in Google Images (<https://support.google.com/webmasters/answer/35308>) or Google News (<https://support.google.com/news/publisher-center/answer/93977>).
- They can opt out content from particular domains from appearing in a set of our products (<https://webmasters.googleblog.com/2013/03/a-new-opt-out-tool.html>).
- Webmasters also can direct that we not show a snippet or cached copy of the page (<https://support.google.com/webmasters/answer/79812>).

Most recently, we have offered webmasters additional controls that allow them to specify limits on the “snippet” that is shown in our search results, sizes for image previews in Google search results, as well as identifying portions of their page that should be ineligible for inclusion in the snippet (<https://webmasters.googleblog.com/2019/09/more-controls-on-search.html>).

We are always working to be good stewards of Search, and will continue to develop additional tools to allow webmasters to control if and how their sites appear in Google Search.

10. Please identify which, if any, third parties have expressly permitted Google to copy or scrape their content, including the form and substance of the communications.

Our business model and mission is to provide our users with the most accurate and useful information. Consistent with that goal, Google Search indexes available websites, and we rank our Google Search results based on their relevance to the user query. As described in response to Question No. 9, if a web page is publicly available and found by our crawlers, and configured to provide information to Google, we will include it in our index.

From time-to-time and for the purpose of optimizing user results on Google Search, we enter into contractual agreements with third party data providers who are particularly well-positioned to supply our users with reliable and up-to-date content. For instance, we have an agreement with The Weather Channel to provide us and our users with up-to-date weather information, as well as with numerous stock exchanges and other financial information sources to provide share quotes and other financial data. Such content licensing agreements is one way we improve Search and give our users the most useful and accurate information available. We will continue to invest in ways to improve Search so that users can find useful and accurate information when they choose Google Search.

11. Please describe the steps third parties can take to prevent Google from copying or scraping their content.

Webmasters can take a series of steps to control how Google crawls, indexes, and uses content. As described in Question No. 9 above, Google respects industry-standard controls by which webmasters can tell Google not to crawl their content (via robots.txt, see <https://support.google.com/webmasters/answer/6062608>), and or having crawled it, not to index it (via the “noindex” directive, see <https://support.google.com/webmasters/answer/93710>). We also provide a number of tools for webmasters to control how Google crawls, indexes, or uses content from their websites, including controls that allow webmasters to specify that their data should not be included in Google Images or Google News, opt

out content from particular domains, and to specify limits on the “snippet” that is shown in search results. Google is always looking for ways to enhance tools and controls to improve Search, and will continue to do so.

12. Please explain how Google’s algorithm takes into account whether a third party has allowed or disallowed Google from scraping its content.

Google Search respects industry standards regarding web crawling and works to create tools to allow webmasters control over this process (please see our response to Question No. 9, above, for more detail regarding the tools made available to webmasters). In order for a web page to be included in Search results, it is generally necessary that the page be indexed by Google. Thus, if a website owner decides to exclude certain content via robots.txt, it will normally not be indexed and, in turn, will be unlikely to surface in our Search results.

Additionally, if a webmaster uses one of the controls mentioned above in response to Question No. 9, Google’s algorithm will ensure that those controls are respected. For instance, if a website operator has used the opt-out for a particular domain, information for that domain will not appear on the affected products. A site’s decision not to allow Google to show certain content will not directly affect its ranking in Google Search, unless the site uses an opt-out control for organic search itself.

13. Has Google ever represented to any third party that it would remove the third party’s listing or content from its general web search results unless the third party permitted Google to copy or scrape their content? If yes, please describe the relevant circumstances.

Our company mission is to organize the world’s information and make it universally accessible and useful. To keep information openly accessible, we only remove content from our search results in limited circumstances, such as compliance with local laws or site owner requests.

Google strives to be a good steward of Search and to work with webmasters to meet their needs for Search. It is simply not possible for Google to include content from third-party websites in its search results unless Google first crawls the content from the site into its Search index. Google has at times heard from webmasters who have expressed a desire that our controls should be more granular; for instance, that there should be a control allowing content from a site to be excluded from certain features

of Google Search without excluding it from Search as a whole. As explained in more detail in response to Question No. 9, we offer a number of granular controls allowing webmasters to specify that Google should not use content it has downloaded, or should use it only in certain ways. We are always looking for ways to improve Search, including adding additional granular controls governing how websites are displayed in Search, and will of course continue these efforts.

14. For each of the past five years, please identify the percentage of clicks on Google’s search engine results page that consist of news articles.

15. For each of the past five years, please identify the percentage of clicks on “Trending Queries” that consist of news content.

16. For each of the past five years, please identify the percentage of clicks on high-volume queries in Google Search that consist of news content.

Because the answers to these questions are related, we’ve grouped together our response to Question Nos. 14 through 16.

Google Search was built to provide everyone with access to information on the web. Every time a user searches on Google, there are thousands, sometimes millions, of web pages with helpful information. When users are looking for news, those pages could be from sources ranging from large traditional news publishers, to new digital outlets, local news sites, or nontraditional outlets such as Twitter. Google strives to sort through those and connect users with the most relevant information based on the text of their query.

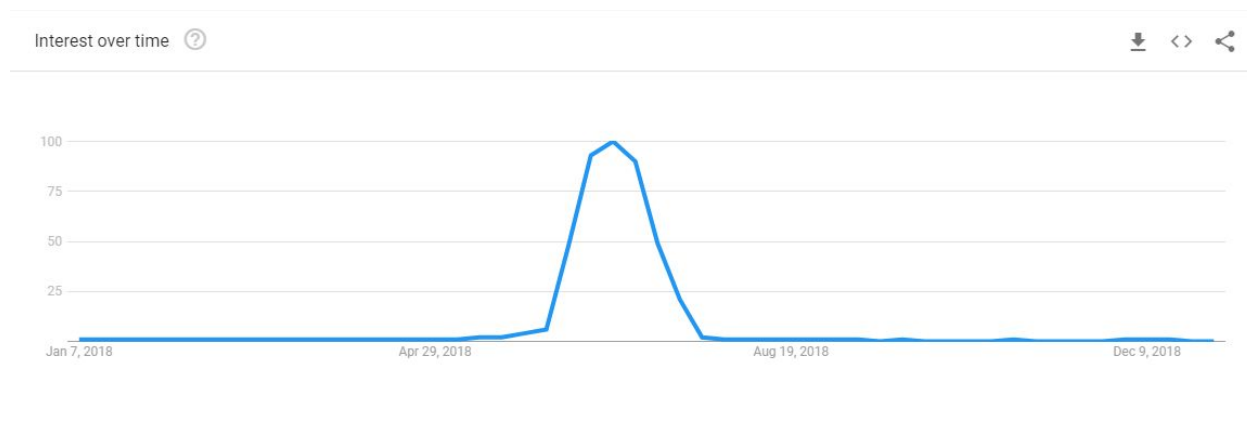
Our news experiences are designed to help users quickly discover relevant, authoritative news from a range of sources across the web. If a user searches for a topic that is in the news, their results may include some news articles labeled “Top Stories” at the top of the results, featuring articles related to the search and a link to more related articles on the News tab. Users can also search for news stories and see context and multiple perspectives in the results on <http://news.google.com/>, news on the Assistant, and within the “Top News” section of search results on YouTube. Depending on the search terms a user uses, news articles may also surface in our Search results. And, of course, search results can also include news from nontraditional outlets, like Twitter, blogs, or other sites. For these reasons, whether an individual link is considered “news content” can vary, based on whether that definition

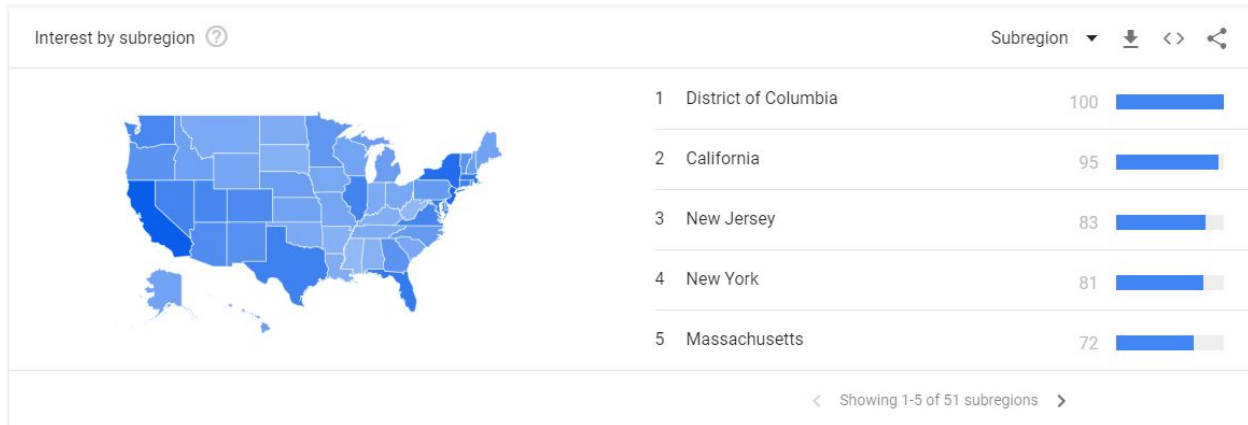
includes social media sites, like Twitter, and non-mainstream media sites, like blogs, among other factors.

We recognize people are interested in Search and associated trends, which is one of the reasons we created our Google Trends site, available at <https://trends.google.com/>, where people can find data on trending topics in the news and related data, as well as several other topics.

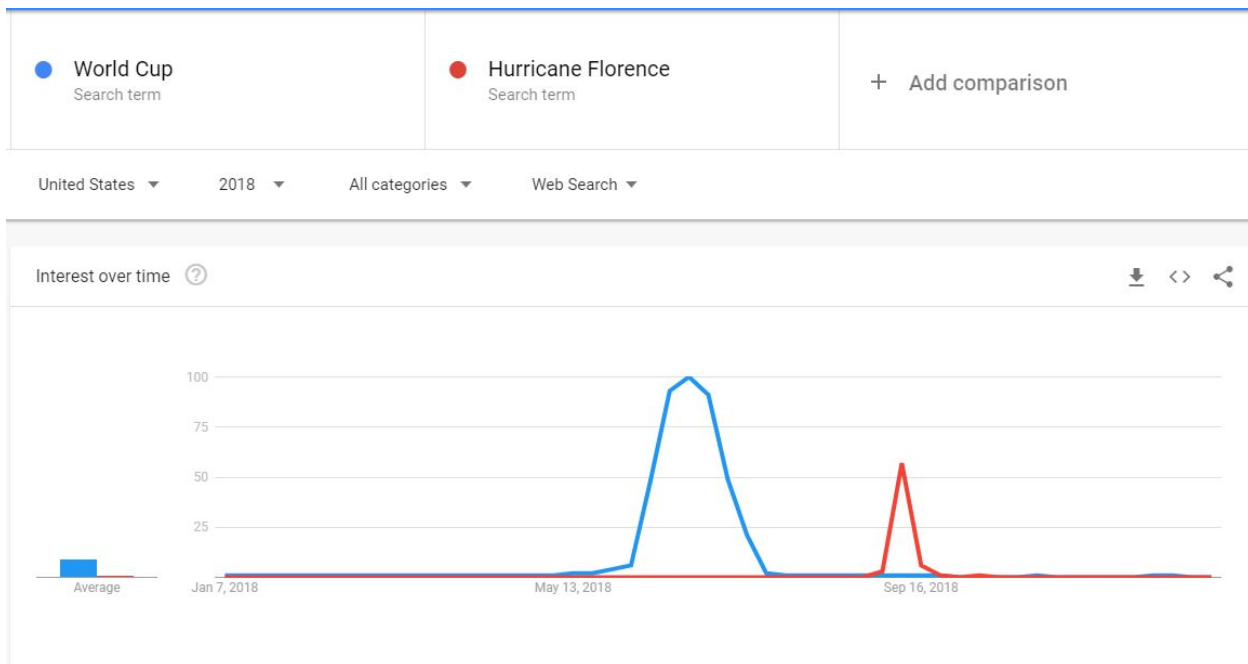
The Google Trends site provides the ability to sort data such as trending news topic by year or country and to compare terms against each other. The tools on Google Trends enable a user to sort news searches by location, volume of interest, and trends over time.

For example, the most popular news topics in the United States during 2018 were “World Cup,” followed by “Hurricane Florence,” and then “Mega Millions.” Using Google Trends to further analyze the search term “World Cup” in the United States for that year, our Google Trends site shows that interest peaked during the summer months of 2018 and that interest was particularly strong in the District of Columbia, California, and New Jersey.





Comparing the term “World Cup” against the term “Hurricane Florence” shows comparable volumes and timing of searches run on those two terms during 2018.



Additional analytics report data on news and other searches trending over the past 90 days, 30 days, 7 days, 24 hours, 4 hours, and even the past hour. Google will continue to look for ways to help publishers understand trends in news queries through Google Search.

17. For each of the past five years, please identify the value of news articles crawled on Google Search, including but not limited to any value derived for:

a. Drawing traffic to Google Search;

- b. Improving search results on Google Search;**
- c. Collecting data for Google Ads;**
- d. Collecting data for Google Home; and**
- e. Collecting data for any machine learning projects.**

Google drives valuable referral traffic to news sites — approximately 24 billion visits to news publishers globally each month; or 9,000 visits (clicks) a second. This allows publishers to build new audiences and grow revenue. Deloitte conducted a recent study of European news publishers, and found that web search referral traffic supports 6.2% of news publishers’ total revenue. In addition, the Deloitte study found that the average value (measured in revenue) to a publisher of web visits were .04 to .06 euro per web visit/click. For more information, please see <https://www2.deloitte.com/content/dam/Deloitte/es/Documents/financial-advisory/The-impact-of-web-traffic-on-revenues-of-traditional-newspaper-publishers.pdf>. An overwhelming number of news queries do not show ads. And, although publishers can opt-out of search, an overwhelming number of publishers do not choose to do so.

We work hard to provide our users with a useful and trustworthy source of information and to ensure the most relevant results are surfaced on Search, and that includes when a query may call for information that is in the news. We believe that the inclusion of links to news articles in Google Search benefits both publishers and users by helping them find each other, as readers find sources of news information and publishers receive traffic which they can monetize through advertising and subscriptions. Google benefits by being able to fulfill its mission of organizing the world’s information and making it universally accessible and useful. Theoretically, improving the quality of its search results generally, including by surfacing quality and relevant news results, might be said to result in increased traffic; however, this is a qualitative benefit, not a direct monetary benefit.

Further, we’ve worked with publishers of all sizes to make Google work better for them. Our “Subscribe with Google” feature was a specific ask from publishers who wanted us to help support their business models. We have also launched a series of labs working directly with local publishers to drive value in their subscriptions and improve their underlying data capabilities.

18. For each of the past five years, please identify the percentage of video search results on Google that consist of YouTube results.

19. For each of the past five years, please identify the percentage of video search traffic on Google that terminates on YouTube.

Because the answers to these questions are related, we've grouped together our response to Question Nos. 18 through 19.

YouTube is one of several online digital platforms for sharing videos that may appear in Search results for inquiries that may call for video content. A user may specify YouTube in a search query for video content, but also may not, or may request results from a different online digital platform, such as Twitch. Google Search strives to deliver the most relevant and reliable information available to the user. Thus, when a user searches for video content, results will include links to YouTube and other online digital platforms if those are the most relevant links responsive to a user's query. YouTube is a content rich digital platform, with over one billion hours of content watched on a given day. If a search query seeks a video that is on YouTube and not on another platform, such as Twitch, Google Search will surface the most relevant link, and in this example, that would be YouTube. As noted below in Question No. 21, Google Search is not designed to favor YouTube over other online digital platforms in Search ranking.

20. Since 2014, Google has stopped allowing video providers such as Vimeo, Wistia, and others to be embedded on Google web pages and displayed in Google's video results.

a. Why did Google institute this change?

b. Please describe the effects of this change.

Google has not stopped allowing video providers such as Vimeo, Wistia, and others to be included in our search results, including in the "Videos" tab in Search and in the video thumbnails at the top of the Search page. We are unsure what is referred to by "stopped allowing video providers...to be embedded on Google web pages"; it is possible, for instance, to embed Vimeo-hosted videos on Google's Blogger service.

21. Does Google plan to continue favoring YouTube in this manner for the foreseeable future?

Google Search is not designed to favor YouTube over other online digital platforms in Search ranking. The success of Google Search is dependent on its ability to provide the most relevant and reliable information available, understanding that is what users want, whether or not those results are from Google or non-Google owned domains.

22. Why is Google review content excluded from the organic index?

When a user searches for information about a place, user reviews may appear in a formatted search unit about that place. We work hard to provide our users with a useful and trustworthy source of information and continuously work on ensuring that the most relevant results are surfaced. Consistent with those goals, Google has assembled different indexes for different types of online content, e.g., websites, images, videos, book excerpts, scholarly articles, and news. When a user enters a query, Google may display relevant search results from some or all of those indexes depending on the inferred intent of the query. For instance, Google's review content is part of its local index, as is other information about local places such as the address, hours of operation, and phone number of a particular establishment. The local index is used to display relevant search results when a user enters a query related to a place, such as "pizza washington dc." If users do not find our search results to be helpful, they can and will use another general search engine or go to a specialized vertical search site. Providing the best possible search results is one way we meet our commitment to our users, and we'll continue to work hard to improve them.

23. In Google's view, is it economically feasible to develop a competitive search engine without either (a) creating a comprehensive and up-to-date index of websites; or (b) entering into an arrangement with a search syndicator? Please explain why or why not.

Developing a comprehensive and up-to-date index of websites or entering into an arrangement with a search syndicator is certainly an option, but not a requirement to developing a search engine in this robust and competitive environment. Search engines have different methods of displaying relevant results to users; some search engines utilize an index of websites while others do not. For search engines that provide links to other websites and other online content, some develop their own results, such as Google, Microsoft, and Baidu, and other search engines license their

results, such as DuckDuckGo and Yahoo!. Search providers can also obtain information on indexed sites from third-party indexers, such as the non-profit organization Common Crawl.

There are also many search engines that operate without displaying links to other websites and instead focus on providing different types of content (e.g., specialized search engines in local, travel, and shopping). And in the last several years, it has become even easier to create new, competing search services. Merchants face low barriers to entry and use standardized data formats to put their product listings online, and user-generated content allows sites to rapidly add searchable content to provide answers without the need for crawling or indexing. The availability of such data sources means that it is increasingly easy to create a successful search site in categories like flights, hotels, product search, local ratings and reviews, and restaurants.

24. Does Google obtain, or seek to obtain, any data related to, or associated with, individual search queries from search syndication partners? If yes, please identify the types of data and describe the relevant circumstances.

Yes, all search syndication services, including those offered by Google and Bing, obtain search query data from their search syndication partners. Search syndication services cannot function unless participating sites send search queries to the syndicator's servers. When Google syndicates search results, the syndication partner transmits user queries to Google, then Google generates a list of results and sends them back to the partner, so that the partner can render the results to the user.

25. Does Google require, or has it ever required, search syndication partners to share any type of data with Google as a condition of using Google's syndication services?

a. If yes, please identify what types of data. Google requires search syndication partners to share with Google.

b. If yes, please explain why Google requires search syndication partners to share this data.

c. If yes, please describe how Google uses this data.

Except for the basic data — i.e., the queries themselves and metadata like IP address — required to provide the services, Google does not require, and in the past has not required, that search syndication partners share any other type of data with Google as a condition of using Google’s syndication services.

26. Does Google offer differential terms to search syndication partners based on whether they do or do not share user data with Google? If yes, please describe them and explain the reasons for each differential term.

No, Google does not offer differential terms to search syndication partners based on whether they do or do not share user data with Google.

27. Please identify and describe any conditions that Google imposes, or seeks to impose, on downstream providers who provide users with ad-blocker or tracker-blocker functionality. Please explain how these conditions vary across platforms or devices, such as desktop, mobile, apps, extensions, and browsers.

Google does not impose limits on the ability of third parties to use or develop ad-blockers. For more information, please see <https://security.googleblog.com/2019/06/improving-security-and-privacy-for.html>.

Numerous ad blocking services and browsers are available through Google Search. With respect to its own web properties, Google also provides a platform for distribution of numerous third-party ad blockers: for Android devices through the Google Play Store, and for devices running Chrome or Chrome OS through the Chrome Web Store. Unlike other companies that require their browser to be set as the permanent default on all their devices, Google actively facilitates the ability of users to choose browsers, applications, and extensions of their choice, including those that include ad blocking functionality. As a result, numerous ad blocking apps, browsers, and extensions are available throughout Google’s ecosystem, including on Android and as extensions for Chrome.

Chrome’s policies are the same for all developers on the Chrome Web Store platform, regardless of an extension’s functionality. The only requirements placed on Chrome and Android ad blocker developers by Google are the same as those placed on all app developers: namely, that Android apps comply with Google’s Play Store Developer Distribution Agreement and that Chrome extensions comply with the Chrome Web Store Developer Agreement. The policies in these agreements apply to all developers,

and do not prohibit or restrict ad blocking or any other category of functionality that complies with the Chrome Web Store and Play Store policies. For more information, please see

<https://blog.chromium.org/2019/06/web-request-and-declarative-net-request.html>.

28. Does Google ever require downstream providers to allow ads and/or trackers embedded in ads to pass through ad- or tracker-blocker filters? If yes, please explain why Google requires this and describe the relevant circumstances.

No. Google has no requirements for Chrome extensions to allow ads or trackers embedded in ads to pass through ad- or tracker-blocker filters.

29. Please describe the types of algorithms that Google offers or markets to downstream providers as part of its search syndication services.

Google offers several search syndication options (Google Custom Search), each of which is based on Google's core search technology. With Google Custom Search, providers can create a search engine for their websites, blogs, or a collection of websites. For instance, providers can create a search engine that searches only the contents of one website (site search), or can create one that focuses on a particular topic from multiple sites. Providers can also customize the look and feel of search results, add promotions to search results, and leverage structured data to customize search results. For more information, please see the guide for users available at <https://developers.google.com/custom-search/docs/overview>.

30. Does Google allow downstream providers to purchase an algorithm feed on commercially reasonable terms without requiring an accompanying ad feed?

Yes, Google Custom Search offers both "ads" and "ad-free" options. For instance, a provider has the option to connect its search engine with a Google AdSense account to display relevant Google ads on the provider's result pages. When users click on an ad in search results, the provider gets a share of the ad revenue.

For more information, please see the guide for users available at <https://developers.google.com/custom-search/docs/overview>.

31. Does Google impose any kind of exclusivity provisions in its agreements with search syndication partners? If yes, please describe each type of exclusivity provision and explain why Google requires it.

Google syndicates search results and advertisements. Our standard terms for our online syndication agreements for search and ads do not contain any exclusivity provisions. Partners can also choose to not include search advertising alongside their search results. We also have negotiated agreements with larger syndication partners that contain individually negotiated terms.

Google's standard search syndication feature, known as Custom Search Engine, allows webmasters to embed custom Google search results on their site. The Custom Search Engine terms (<https://developers.google.com/custom-search/docs/overview>) do not contain any exclusivity provisions, and Google does not seek to impose any such requirements on partners.

As noted, Custom Search engine partners also have the choice of whether or not to include search advertising alongside their search results, which allows them to earn revenue for each search a user conducts. This program, known as "AdSense for Search," is also non-exclusive, and its terms are publicly available online (<https://support.google.com/adsense/answer/1354757?hl=en>).

Partners with negotiated agreements are generally free to display websearch results from competitors, but Google generally asks that Google websearch results are not displayed on the same page as results from another websearch provider in order to prevent ambiguity or consumer confusion about which results are provided by Google.

Partners with negotiated agreements typically also include terms related to search ads syndication. While each of these agreements is unique, typical terms include a minimum number of search ads to be displayed together with no substantially similar ads above or directly next to them, and limitations on the font and color of other text-based search ads to ensure that users do not mistake them for Google ads. In exchange, the publisher typically receives a larger share of Google search advertising revenue from searches on each selected site. These terms only apply to sites selected by a partner, and only apply to within-site search advertisements, not to other competing types of advertising, such as display and product ads. Publishers choose which of their websites to include in the agreement.

32. Are there any categories of vertical search feeds (e.g., images, news, video) that Google does not make available for syndication? If yes, please identify each category and explain why it is not made available.

Google's Custom Search Engine allows partners to select and customize the categories of content they receive, including giving partners the ability to create custom "topical" search engines that focus on a specific source or type of result (<https://developers.google.com/custom-search/docs/topical>). For partners who are interested in specific types of content, Google also makes available the option of an individually negotiated agreement.

In addition, for certain types of content, Google licenses specific APIs such as for Google Maps (<https://cloud.google.com/maps-platform/>) and Google News (<https://newsapi.org/s/google-news-api>).

33. Does Google require search syndication partners to include any additional product or service components? If yes, please identify each required product or service and explain why it is required.

Google does not require search syndication partners for search results or advertisements to include any additional product or service components.

34. Does Google specify any product design features that its search syndication partners must adopt (e.g., minimum number of ads per results page, notice-screens, default settings). If yes, please identify each required feature and explain why it is required.

The standard Google Custom Engine and AdSense for Search (AFS) terms of use are publicly available at <https://developers.google.com/custom-search/docs/overview> and <https://support.google.com/adsense/answer/1354757?hl=en>. These terms contain no minimum ad or placement requirements, and contain only minimal formatting requirements designed to avoid user confusion and prevent fraud.

Partners with negotiated agreements are generally free to display websearch results from competitors, but Google generally asks that Google websearch results are not displayed on the same page as results from another websearch provider in order to

prevent ambiguity or consumer confusion about which results are provided by Google.

Partners with negotiated agreements typically also include terms related to ads syndication. While each of these agreements is unique, typical terms include a minimum number of search ads to be displayed together with no substantially similar ads above or directly next to them, and limitations on the font and color of other text-based search ads to ensure that users do not mistake them for Google ads. In exchange, the publisher typically receives a larger share of Google search advertising revenue from searches on each selected site. These terms only apply to sites selected by an AFS user, and only apply to within-site search advertisements, not to other competing types of advertising, such as display and product ads. Publishers choose which of their websites to include in the agreement.

35. Does Google constrain search syndication partners from blocking, moving, labeling, or re-ordering advertisements? If yes, please describe each type of constraint and explain all the reasons each constraint is imposed.

Google provides its search ad syndication partners (i.e., AdSense for Search or AFS partners) with several options for reviewing and blocking ads via the AFS user interface. For example, in the AFS user interface, publishers may block ads related to sensitive topics such as religion or politics, or from general categories, such as apparel, internet, or real estate; they may also block specific advertisers and creatives. In addition, publishers may customize the length and layout of the Google search box, and select colors or styles for AFS ad results, as well as choose different ad formats. Note that Google does not permit AFS publishers to alter AFS code, as per Google's program policy, to benefit and protect end users.

36. How does Google determine which developers are permitted to use Widevine?

Widevine is Google's proprietary digital rights management (DRM) component. Widevine's DRM solution provides the capability to license, securely distribute, and protect playback of content on consumer devices. Content owners, multiple service operators, and digital media providers utilize Widevine's solutions to ensure the secure delivery of premium content to their customers. Integration between Widevine and developers' platforms requires significant resources from both sides because of, in part, necessary technical integration discussions and robust testing.

Therefore, the experience and resources of an applicant are important factors in determining whether it is efficient to devote resources to enable a successful integration that meets studio DRM requirements.

All developers can apply for a free license to use Widevine. Among other successful integrations, Widevine has licensed its DRM to Mozilla (Firefox), Opera, Brave, Vivaldi, and the Electron open-source framework. Notably, Google licenses Widevine more broadly than alternative DRMs, such as FairPlay and PlayReady. Widevine does not, however, support developers whose design facilitates unauthorized distribution of content or does not meet studio DRM requirements.

37. What factors determine whether Google’s services (e.g., Google Docs, Gmail, YouTube) work as well on non-Google browsers as they do on Chrome? Please identify each factor that does or could account for any difference in functionality and explain the basis for including each factor.

As a developer of web services, it is in Google’s best interests to have its products be as widely accessible as possible. Google works constantly with other developers to develop generally-applicable standards that benefit users of any browser. We also devote substantial engineering resources to running performance tests and troubleshooting before and after launches and updates to ensure that our web services function similarly across all browsers. We also provide dedicated support centers for each of our products that allow the community to bring to our attention any performance-related issues or bugs. When we become aware of performance bugs impacting users for any browser, we work quickly to address the issue.

38. What steps does Google take to ensure that Google’s services work as well on rival browsers as they do on Chrome?


Google strives to make its products as widely accessible as possible, which includes making products that work well regardless of browser choice. To meet this goal, Google runs performance testing across browsers before and after launch. Google also provides in-product channels for users across browsers to provide Google feedback, as well as dedicated support centers for each of our products that allow the community to bring to our attention any performance-related issues or bugs. Additionally, Google works to better the web ecosystem for the vast array of digital services available to users for email, productivity, videos, and more by contributing to generally-applicable web standards that benefit all users of the internet, regardless of browser choice.

39. When Google updates Google's services, what processes does Google have in place to inform non-Google browsers of those changes?

When Google updates its services, we have processes in place to inform the developer community at large, which includes non-Google browsers. Making products available across all browsers meets our users' high expectations and helps achieve our goal to make each product useful and accessible to all of our users. To ensure our products work across several browsers, we regularly publish updates informing the developer community about upcoming new features and functionalities. We also provide dedicated support centers across browsers for our products that allow the community to bring to our attention any performance-related issues or bugs.

40. In September 2018, Google modified Chrome so that users who log into any Google service (e.g., Gmail) would automatically be signed into Chrome, subjecting users to greater tracking by Google. Does Google permit users to sign into Google services while using Chrome without also being signed into Chrome? If yes, please describe all the steps a user would need to take in order to prevent Google from signing the user into Chrome every time the user signs into a separate Google service. If no, please explain why.

Yes, users have the option to sign in to Google services in Chrome without being automatically signed in to Chrome. We are an industry leader when it comes to choice, transparency, and control for users, and this feature is no different. To learn more about how users can turn off automatic sign-in to Chrome through the steps described on the Google Chrome Help Page, please see https://support.google.com/chrome/answer/9159867?hl=en&ref_topic=7439538. For instance, as of the drafting of this response, the Help Page lists the following four steps:

1. On your computer, open Chrome.
2. At the top right, click More  > Settings.
3. At the bottom, click Advanced.
4. Under "Privacy and security," turn off Allow Chrome sign-in.
 - If you [turned sync on in Chrome](#), turning off this setting will also turn off sync.

Google works to give users options when using our services. If a user does not turn off the automatic sign in, when that user signs in to their Google Account in desktop through Google services like Gmail, they are automatically signed in to Chrome. This feature was added in 2018 to give users one-click sign-in to their Google Account and to help users be more aware of their sign-in status, particularly when they share a single device among multiple users (i.e., a family computer). When a user is automatically signed in to Chrome upon sign in to a Google web service (e.g., Gmail), Google does not collect additional user data than it would have had the user only signed in to the Google service.

41. If a user visits, using a non-Google browser, a website that uses Google Analytics, will the website be slower to load than if the user had accessed the same website through Chrome? If yes, please describe the average length of delay and the source of the delay.

Google strives to ensure that its services work well no matter how a user accesses the web. Consistent with this goal, Google Analytics is designed to be compatible with all major browsers. For example, Google Analytics supports the two most-recent major releases of Firefox, Edge, Chrome, and Safari. In addition, Google does not design or use Analytics to favor Chrome over third-party browsers. When Google is informed about a performance issue of a service on a third-party browser, Google moves promptly to explore and redress the issue if possible. We are committed to taking steps to remedy performance issues as quickly and thoroughly as possible.

We created Analytics to simplify marketing analytics in the same way we simplified web search with Google.com. With infrastructure that allows us to handle billions of daily search queries — generating answers before users even finish typing — we set out to give enterprise marketers the same utility. Marketers need enormous computing power, data science, and smart algorithms, all working together to quickly make sense of data for them. Google Analytics' compatibility with major browsers helps enable Google to meet marketers' needs.

42. Does Google use Google Analytics to disadvantage non-Google web browsers? If yes, please describe the relevant circumstances and explain why Google engages in this conduct.

No. Google Analytics is designed to be compatible with all major browsers and is not designed to disadvantage third-party browsers. For example, and as noted above,

Google analytics supports the two most-recent major releases of Firefox, Edge, Chrome, and Safari.

43. If a user visits, using a non-Google browser that blocks Google Analytics, a website that uses Google Analytics, will the website be slower to load than if the user accesses the same website through a browser that does not block Google Analytics? If yes, please describe the average length of delay and the source of the delay.

Google strives to ensure that its services work well no matter how a user accesses the web. Google Analytics is designed to provide a consistent experience across all browsers without a perceptible difference in page load times, including for browsers using typical blocking techniques.

44. Does Google in any way limit the ability of users to install third-party extensions that affect how websites display and operate on Chrome and Chromium? If yes, please describe each limitation and explain all the reasons why each is imposed.

Since its launch in 2008, Google has worked hard to build an increasingly robust system of APIs for Chrome and Chromium as part of the Chrome Extension system, which has allowed developers to create more than 180,000 extensions for users to download and extend Chrome's functionalities. With a goal of further improving user security and protecting user privacy, as well as Chrome's security and functionality, Google periodically updates the Chrome Extension system, including adding new APIs and removing or replacing APIs that have become obsolete or proven to reduce user security. These platform improvements apply to the developers of all extensions available on the Chrome Web Store, irrespective of an extension's functionality. Google's objective in such updates is to improve the security, functionality, and performance of Chrome, not to limit the ability of users to install extensions of their choice.

Google has robust policies for developers that distribute their extensions through the Chrome Web Store. For example, an extension must have a single purpose that is narrow and easy-to-understand. Developers must not create an extension that requires users to accept bundles of unrelated functionality, such as an email notifier and a news headline aggregator, or that downloads a local executable. If two pieces of functionality are clearly separate, they should be put into two different extensions,

and users should have the ability to install and uninstall them separately. Ad blockers are not prohibited by policy, and are required to abide by the same policies as all other extensions. For more information, please see our Chrome Developer Program Policies available at https://developer.chrome.com/webstore/program_policies.

45. Has Google made, or does Google plan to make, any changes that will impede the ability of ad-blocking extensions to reliably detect ads? If yes, please describe each change and explain all the reasons Google has made, or plans to make, each change.

As noted above, Google periodically updates the set of APIs available to Chrome's extensions system as part of a broader effort to increase user security and privacy, but these updates are not designed to prevent ad-blocking, but rather to further user security and privacy. One of the many changes currently being contemplated involves replacing the Web Request API — which has been implicated in over 42% of recent malware found in the Extensions Web Store — with an upgraded version of the Declarative Net Request API. This change will improve user security, while still allowing ad blocking extensions to reliably detect and block ads. For context, Apple's Safari uses a similar API in Safari's ad-blocking technology. For more information, please see <https://blog.chromium.org/2019/06/web-request-and-declarative-net-request.html>.

46. Has Google made, or does Google plan to make, any changes to Chromium that will require non-Google web browsers to invest resources to restore previous levels of functionality? If yes, please describe each change and explain all the reasons Google has made, or plans to make, each change.

Chromium is an open-source project, whose code is used by Google as the foundation of Chrome and by many other developers as the foundation for their browsers (i.e., Microsoft's Edge Browser). Open source means that the source code is freely available for all users and other developers to use or modify as they see fit. Open-source projects reflect Google's support and commitment to community and transparency for the benefit of all users and the digital ecosystem. The open exchange of information and the benefits of collaboration inherent in open-source projects often result in the most cutting edge technology.

By virtue of its significant contributions to Chromium, Google actively subsidizes other browser developers who choose to use Chromium's code. Any project contributor — not just Google — is able to suggest improvements. Because

Chromium is constantly evolving and improving, sometimes existing functions will be replaced with new features, and Chromium-based browser developers will need to make a choice about whether to use their existing version of Chromium or upgrade to the newer version. Because Chromium is open-source, developers have access to both the latest version as well as prior versions. For more information, please see <https://www.chromium.org/Home>.

47. Please identify all of the ways that Google Search differentiates its treatment of publishers based on whether the publisher has or has not adopted Google’s Accelerated Mobile Pages (AMP) and explain all the reasons for treating them differently.

Accelerated Mobile Pages (AMP) is an open-source HTML framework overseen by the AMP Open Source Project. As noted above in the response to Question No. 46, open-source projects are designed for the benefit of all users and the digital ecosystem. AMP helps webmasters create web pages that are fast, smooth-loading, and that prioritize the user-experience, which helps publishers create mobile-friendly websites.

Google’s search ranking is based on over 200 factors that interact in complex ways. A web page’s status as an AMP Page is not one of the factors considered. Specifically, content does not receive any ranking advantage in general Google Search results merely because it is AMP, and content is not penalized in organic Google Search results for being non-AMP.

Some limited Search features require AMP content for technical reasons. For example, there is a type of specialized search result called the “Top Stories carousel” on mobile devices, in which a selection of fast-loading mobile pages of news stories are displayed together to allow a user to quickly “flip” through them. Because the carousel user experience involves being able to click on an article in the carousel and then swipe between full pages of content in a “viewer” (essentially an AMP gallery), this carousel does require caching, privacy-preserving pre-rendering, and embeddability, which are implemented via the AMP framework on the technical level. Carousels typically appear only on mobile devices and only for certain content types, making up only a small portion of Google’s overall search results.

Non-AMP content can and does appear everywhere else on the Search results page, including as part of the “Top Stories” block above the AMP carousel or in the organic

links that make up the remainder for the page. For more information, please see <https://webmasters.googleblog.com/2018/01/using-page-speed-in-mobile-search.html>.

48. When a user clicks on content that has adopted AMP, why does Google display that third-party content through a Google URL?

One of the advantages of the AMP format is that content can be locally cached close to the end-user, which allows it to load quickly and reliably. This lightens the burden on publishers to pay for or run expensive content distribution networks.

Google is one of the entities who runs an AMP cache, and links from Google Search go to those cached versions of publisher pages. Web browsers automatically display the URLs for Google's AMP cache when showing these fast-loading, locally-cached pages because that is the URL that is serving the content. However, because some publishers value having their own URL displayed with their content, even when that content is cached elsewhere, the AMP Project has created and implemented a feature known as "signed HTTP exchange" that allows for content to be displayed under the original publisher's URL regardless of where on the web it is cached. This is available through supported web browsers. Google does not display third-party AMP content under a Google AMP cache URL for publishers that have adopted this new technology.

49. Does Google Search privilege publishers who use AMP over publishers that adopt non-Google technical solutions that would also guarantee fast-loading pages? If yes, please describe the relevant circumstances and explain all the reasons why Google engages in this preferential treatment.

No. Google Search does not privilege publishers who use AMP over publishers that adopt non-Google technical solutions that would also guarantee fast-loading pages. As noted in response to Question 47, a web page's status as an AMP Page is not one of the factors considered by Google's search ranking algorithms. Specifically, content does not receive any ranking advantage in general Google Search results merely because it is AMP, and content is not penalized in organic Google Search results for being non-AMP.

50. For each of the past five years, what percentage of searches on Google are "location searches" that return a Google OneBox containing location information for an establishment?

Google Search responds to trillions of users queries from around the globe every year, driven by our company mission to organize the world's information and make it universally accessible and useful. Thus, if a user is searching for a specific restaurant, for example, Google Search results may include a link to that restaurant, as well as a map showing that restaurant's location. A search for "hot dogs DC" may bring back, among other results, a listing for Ben's Chili Bowl in Washington, D.C., along with that restaurant's address and a link to a map reflecting where Ben's Chili Bowl and other nearby result listings are located.

We do not have a standard definition for what searches are considered "location searches" and thus, cannot provide the specific information requested. For example, a user could search for "McDonald's" and receive menu nutrition information, the company's stock price, and local restaurant locations, among many other types of information. Whether a user intended this to be a location search would be unclear.

51. How does Google determine which establishments are highlighted in Google Maps?

Google maps is designed to allow our users to fully explore the world around them, from finding new restaurants to obtaining traffic updates while on their way. In Google Maps, establishments are represented by "labels." A label can consist of an icon, text, or both an icon and text. In many areas, there are vastly more establishments than can be shown without labels overlapping. In order to make Maps useful to users, overlapping labels are not shown in most cases. This means that where labels would overlap, one or more of the labels may be hidden unless the user zooms in far enough that there is space for the label to show. This applies to both establishments as well as to other features on maps, such as bus stops and parks.

Several factors determine which labels are shown and when they should be shown, including the popularity of the establishment (as measured by searches or visits in general or with tourists), whether the user has previously searched for or visited the establishment, or whether the user has saved the place for later viewing, among other factors. Our goal is always to provide a user with the most accurate and useful information, while on Google Maps or on any Google product.

Establishments may also highlight their establishment on Google Maps through purchasing ads on Google AdWords. Using a local campaign, advertisers can bid to

show up on Google Maps with a special pin with a custom logo and accompanying text.

52. For each year since 2014, what percentage of mobile apps with map functionality have used the Google Maps Platform?

Google Maps Platform allows developers to embed Google Maps into mobile apps and web pages, or to retrieve data from Google Maps. We compete against a number of other companies that provide map functionality, including Apple, Foursquare, MapBox, Here, and others. Whether a developer decides to use Google Maps Platform versus services from a competitor, such as Apple, is a developer decision to which Google does not have insight. While device manufacturers and app stores, such as Apple's App Store and Google Play Store, may offer devices or apps with map functionality, Google is not in a position to query the total number of apps with map functionality to understand how many of such apps choose to use Google Maps Platform versus a competitor's product.

53. Please identify any conditions that Google imposes on app developers who use Google Maps Platform functionality in their apps.

Most of Google's partnerships with app developers who choose to use Google's Maps Platform are subject to the Google Maps Platform Terms of Service, which are available at <https://cloud.google.com/maps-platform/terms>. Other partnerships are governed by individually-negotiated contracts.

54. Please identify all of the ways that Google limits the ability of app developers who use the Google Maps Platform to also use non-Google mapping services and explain all the reasons for each limitation.

As noted in the Google Maps Platform Terms of Service, available at <https://cloud.google.com/maps-platform/terms>, Google's agreement with app developers is non-exclusive, and does not limit or prevent them from also collaborating with other mapping services, such as Mapbox and OpenStreetMap. In section 3.2.4(e) of these terms of service, in order to prevent brand confusion and other negative user experiences, we do restrict developers from incorporating Google Maps Core Services into an application that uses a non-Google map. For example, this might restrict a developer from displaying certain Google map data on a non-Google map.

55. Is the placement a business receives in Google Maps at all affected by whether that business purchases ads through Google? If yes, describe the relevant circumstances and explain why Google engages in this conduct.

Businesses can purchase ads in Google Maps to highlight their business location, and those ads are clearly labeled as ads for the user. In those instances, ads that feature the business location may appear when users make searches on the Google Maps mobile app. Businesses are charged a standard cost-per-click (CPC) for these types of clicks on local search ads. For more information, please see <https://support.google.com/google-ads/answer/3246303?hl=en>.

Aside from this ad product, businesses can optimize the likelihood that their results will be surfaced in Google Maps by providing and updating information about their business in Google My Business, which is free. Providing and updating business information in Google My Business can help a business's local ranking on Google and enhance its presence in Search and Maps. Local results favor the most relevant results for each search, and businesses with complete and accurate information are easier to match with the right searches. For more information, please see <https://support.google.com/business/answer/7091?hl=en>.

56. Does Google permit non-Google mapping services to appear in map results in local search boxes? If no, please explain all the reasons why.

Yes, other mapping services, such as MapQuest, Yahoo Maps, and OpenStreetMap are available on Google through its general web search results, which provide information about what is available on non-Google sites. Users can easily click through to the sites of third-party map providers (who operate their own local indexes) if they prefer to use those services, and can also navigate directly to their website, download their mobile apps, or access competing map services in other ways.

Our users receive tremendous value from quickly seeing highly relevant and high quality answers from Google's map results. These results are drawn from its local index, which contains information regarding places, such as hours of operation and reviews. The local index is formed with a variety of sources, including business owners' content, user-generated content, crawled content, and commercially licensed content. The use of a structured database with data about places like type of

business, hours, location in relation to the user, reviews, etc., further enables our algorithms to consider all of these attributes to provide better local results that can be easily filtered and sorted. For more information, please see <https://support.google.com/business/answer/7091?hl=en>.

57. Does Google require users or developers to utilize any part of the Google Maps Platform as a condition for using any other Google service? If yes, please identify each requirement and explain all the reasons for each requirement.

No. Google does not require users or developers to utilize any part of the Google Maps Platform as a condition for using any other Google service.

58. Does Google require users or developers to utilize another Google service as a condition for using the Google Maps Platform? If yes, please identify each requirement and explain all the reasons for each requirement.

No. Google does not require users or developers to utilize another Google service as a condition for using the Google Maps Platform.

59. What types of data does Google collect from apps that use the Google Maps Platform? Please identify each type of data and explain how each is used.

Google works hard to provide choice, transparency, control, and security for user data. We were one of the first companies to offer a centralized data portal when we launched MyAccount in 2015 (<https://myaccount.google.com>). Now referred to as Google Account, the portal provides easy-to-use tools to help manage privacy and security. That includes our Privacy Checkup tool (<https://myaccount.google.com/Privacycheckup>) that lets our users review and change their privacy settings:



Privacy Checkup

Review key settings & the data Google uses to personalize your experience

✓	Activity controls reviewed	▼
✓	Phone numbers reviewed	▼
✓	About you reviewed	▼
✓	Ad settings reviewed	▼

When you're done, also consider reviewing your settings in the products you use most, like Maps, YouTube, and Gmail

Personalize your Google experience

Choose whether to save activity data in your Google Account for faster and more useful Google services, like better commute options in Maps and quicker results in Search



Web & App Activity (Paused)

Used by Assistant, Google Maps, and others

If you turn this setting on, Google will save your activity on Google sites and apps in your Google Account, including searches and associated info like location. You can also choose to save which apps you use, your Chrome history, and which sites you visit on the web.

This can help Google to give you faster results by autocompleting searches, as well as personalized experiences in Maps, Assistant, and other Google services. [Learn more](#)

[Manage Web & App Activity](#)



Location History (Paused)

Used by the Google app, Google Maps, and others

If you turn this setting on, Google will create a private map of where you go with your signed-in devices, including how long and how often you visit and how you travel between places, even when you aren't using a specific Google service. This map is only visible to you.

This gives you improved map searches and commute routes, as well as helping you to rediscover the places you've been and the routes you've travelled. [Learn more](#)

[Manage Location History](#)



Voice and audio recordings (Paused)

Used by Assistant, Google Maps, and others

If you turn this setting on and use voice commands (such as "Ok Google") or touch the microphone icon, Google will save a recording of your voice and other audio inputs.

Google can use this data to improve its speech recognition so it can understand you better.

[Learn more](#)

[Manage voice and audio recordings](#)



YouTube Search History (Paused)

Used by YouTube, Google Assistant, and others

If you turn this setting on, Google will save your YouTube searches to your Google Account.

This can help make future searches faster and improve recommendations in YouTube and other Google services. [Learn more](#)

[Manage YouTube Search History](#)



YouTube Watch History (Paused)

Used by YouTube, Google Assistant, and others

If you turn this setting on, Google will save the YouTube videos you watch to your Google Account.

This can help make your recently watched videos easier to find and improve recommendations in YouTube and other Google services. [Learn more](#)

[Manage YouTube Watch History](#)

Additionally, Google has a longstanding commitment to ensuring both that our users share their data only with developers they can trust, and that they understand how developers will use that data.

For example, our Google APIs terms of service, which govern how developers can access user data, were introduced in 2011 (<https://developers.google.com/terms/>). Since their inception, our terms have required that developers provide and adhere to

a privacy policy that clearly and accurately describes what user information they collect and how they use and share that information with others.

Since 2016, those terms have been supplemented by a user data policy found at <https://developers.google.com/terms/api-services-user-data-policy>. That policy prohibits developers from exposing a user's non-public content to other users or to third parties without explicit opt-in consent and also prohibits scraping, building databases, or otherwise creating permanent copies of users' data.

As we disclose in our privacy policies and developer documentation, in order to provide information to users through the Google Maps Platform in response to the API calls initiated by them, Google must receive certain types of data. The actual data collected by Google depends on which API is implemented by the developer and how it is implemented, which may include the IP address of the end user in order to communicate with the users' device, geolocation information in order to provide query results to location-related API calls, and search terms input by users when they initiate API calls.

60. Does Google use any data collected from apps using Google Maps for Google's advertising business? If yes, please identify each type of data and explain how each is used.

No, Google does not use data related to the use of Google Maps in third-party apps for its advertising business.

61. Please identify all the factors that Google uses to determine when to allow or disallow non-Google properties to be listed in Google results across all of Google's products. For example, a hotel will not appear in Google Hotels unless that hotel is part of the Google Hotels program, but news stories will appear in Google News regardless of any affiliation with Google. Please explain what accounts for this and similar differences in how Google treats Google and non-Google properties.

Google Search includes many different products, and each one is designed to offer users the best experience for what they are seeking. For Google Hotels, in order to provide the information a user is seeking, Google must have a relationship with the travel agency or enterprise in order to search for reservations and display prices. This is more complicated than a standard display of potential websites responsive to a standard search. Similarly, we have standards for what content can appear in Google

News. Google allows webmasters to participate in Google News, but subject to certain content policies, including that the site in question be a source of fresh, original content and that it not be directed to providing medical advice. These standards are publicly available at <https://support.google.com/news/producer/answer/6204050>.

62. Please describe the Google My Business (GMB) program.

Google My Business (GMB) is a free tool for businesses to promote themselves online, connect with customers, and create and update their Business Profile. A Business Profile displays key information to users such as the business's phone number, website, and operating hours. Businesses can manage the information that users see when they search for them in the Business Profile. To create a GMB account and claim a business, Google requires that businesses verify themselves to ensure that the rightful owner of the business controls the Business Profile. Google then verifies businesses over the phone, through text message, or returning a postcard.

63. Please identify and describe each level of the digital ad tech supply chain.

Digital advertising technologies evolved to help: (1) advertisers reach their desired target audience across the internet and optimize their return on ad spend; and (2) digital publishers (e.g., web and app developers) increase competition for their ad space and maximize revenue from the sale of that ad space. Digital advertising technologies that help publishers are generally referred to as supply-side tools, while those that help advertisers are generally referred to as demand-side tools. But many advertising technology tools serve both advertisers and publishers. Common advertising technology tools include ad servers, demand-side platforms (DSPs), ad networks, ad exchanges, and supply-side platforms (SSPs). While historically different, many ad tech tools increasingly offer similar functionalities and are often used interchangeably by advertisers and publishers. In addition, these tools can be used in a variety of combinations, and many programmatic sales of online ad inventory only involve some of these tools described below:

- **Ad servers:** For advertisers and agencies, ad servers help serve ads and manage ad campaigns across thousands of publishers, websites, ad formats, and ad channels. The ad server decides which creatives to send to each web publisher, tracks ad performance across sites and publishers, and consolidates reporting. For publishers, ad servers help serve the right ad in the right ad unit

on the publisher's web page at the right time. Ad servers also help publishers forecast available ad inventory, manage and track returns on their ad sales, manage ad unit sales across different channels and buyers, enable "publisher-side" targeting, and provide reporting to bill advertisers.

- **DSPs:** These are web-based software platforms that help advertisers and ad agencies bid on and buy ad space and optimize their ad campaigns across sources of supply of online ad space, which can be ad exchanges, supply-side platforms, or web publishers themselves. DSPs thus help advertisers maximize the return on their ad spend and the success of their ad campaigns.
- **Ad networks:** Initially, ad networks aggregated and sold online ad space for multiple web publishers so that advertisers did not have to negotiate with individual publishers. By aggregating and selling online ad space from many different web publishers, ad networks enhanced market efficiency and grew the amount of online ad space available for purchase. Today, ad networks continue to do that, but also typically aggregate demand and spend from multiple advertisers and ad agencies and offer interfaces for advertisers and agencies to buy ad space on their network.
- **Ad exchanges:** Ad exchanges run an auction in which ad buyers (e.g., agencies, DSPs or ad networks) bid on ad impressions on various web sites or mobile apps, and web publishers or app developers sell ad impressions on their websites or apps, typically in real time.
- **SSPs:** These are web-based software platforms that help publishers sell their ad space across multiple potential demand sources (i.e., DSPs, ad networks, and ad exchanges) to maximize the publisher's revenue.

The list of advertising technology tools above is not exhaustive. There are yet other tools and services that advertisers and publishers use in connection with the purchase and sale of digital advertising space. And, the lines between different advertising technology tools have blurred in recent years. For example, many DSPs, SSPs, and ad networks include ad serving tools; many ad networks offer similar capabilities as DSPs; and SSPs and ad exchanges typically offer publishers similar functionality.

64. Please identify and describe each step of the digital ad tech supply chain where ad spend is debited.

There is a wide range of advertising technology products an advertiser or publisher might utilize in buying or selling digital advertising space. Each ad tech product and each ad tech provider charges different fees, and even the structure of those fees can vary. As an illustration, if an advertiser places an ad through a demand-side platform and wins a real-time auction on an ad exchange, each of those intermediaries will charge the advertiser or publisher a fee or revenue share in addition to the actual winning bid. An advertiser may use several demand-side platforms to buy on dozens of exchanges every day. In addition, publisher and advertiser ad servers may charge serving fees.

65. Assuming that an advertiser chooses to use Google’s ad tech at each step of the supply chain, please identify the average amount that would be debited at each step, assuming \$100 in ad spend.

Google Ads is designed to allow advertisers to take advantage of the benefits of online advertising and therefore boost advertisers’ return on their investment, while giving advertisers control over how much they spend on advertising. Advertisers placing ads through Google Ads do not pay any fees, so \$100 of spending through that channel is entirely available for bidding on inventory. Furthermore, Google Ads provides advertisers data about how much it costs them, on average, for advertising that leads to customer interaction with their product. For advertisers that choose to use other products, Google charges market-driven fees that vary based on factors such as the advertiser’s volume, media spend, choices of optional services, etc. Advertisers can and do use other ad tech companies’ tools in conjunction with or instead of Google’s ad tech tools.

66. Please identify the number of impressions generated by Google in the U.S. for each of the past five years for each of the following:

- a. AdSense for display on Google Network members;**
- b. AdX for display on Google Network members (broken down between Open Auction, Private Auctions, and Preferred Deals);**
- c. DoubleClick For Publishers (DFP) (now rebranded as Google Ad Manager);**
- d. DV360 for display on Google Network members; and**

e. Google Ads for display on Google Network members.

Impressions for our Google Network Members' properties include impressions displayed to users served on Google Network Members' properties participating primarily in AdMob, AdSense for Content, AdSense for Search, and Google Ad Manager (includes what was formerly a stand-alone product known as DoubleClick AdExchange).

Cost-per-impression is defined as impression-based and click-based revenues divided by our total number of impressions and represents the average amount we charge advertisers for each impression displayed to users.

As our business evolves, we periodically review, refine, and update our methodologies for monitoring, gathering, and counting the number of paid clicks on our Google properties and the number of impressions on Google Network Members' properties and for identifying the revenues generated by click activity on our Google properties and the revenues generated by impression activity on Google Network Members' properties.

For Google Network Members' properties, there was a 2% increase in impressions from 2017 to 2018 and a 12% increase in cost-per-impression during that same time period. Comparatively, there was a 3% increase in impressions from 2016 to 2017 and an 8% increase in cost-per-impression during the same period.

Additional information regarding impressions generated by Google is disclosed on a quarterly basis in our Forms 10-K and 10-Q. Recent filings are available at <https://abc.xyz/investor/>.

67. Please identify the annual revenue generated by Google in the U.S. for each of the past five years for each of the following:

a. AdSense for display on Google Network members;

b. AdX for display on Google Network members (broken clown between Open Auction, Private Auctions, and Preferred Deals);

c. DFP;

d. DV360 for display on Google Network members; and

e. Google Ads for display on Google Network members.

Overall, Google's advertising revenues for the past five years were approximately \$116.3 billion in 2018, \$95.4 billion in 2017, \$79.4 billion in 2016, \$67.4 billion in 2015, and \$59.6 billion in 2014.

We generate revenues primarily by delivering advertising on Google properties and Google Network Members' properties. Google properties revenues consist primarily of advertising revenues generated on Google.com, the Google Search app, and other Google owned and operated properties like Gmail, Google Maps, Google Play, and YouTube. Google Network Members' properties revenues consist primarily of advertising revenues generated on Google Network Members' properties. Our customers generally purchase advertising inventory through Google Ads (formerly AdWords), Google Ad Manager as part of the Authorized Buyers marketplace (formerly DoubleClick AdExchange), and Google Marketing Platform (includes what was formerly DoubleClick Bid Manager), among others.

We offer advertising on a cost-per-click basis, which means that an advertiser pays us only when a user clicks on an ad on Google properties or Google Network Members' properties or when a user views certain YouTube engagement ads. For these customers, we recognize revenue each time a user clicks on the ad or when a user views the ad for a specified period of time.

We also offer advertising on other bases such as cost-per-impression, which means an advertiser pays us based on the number of times their ads are displayed on Google properties or Google Network Members' properties. For these customers, we recognize revenue each time an ad is displayed.

Our advertising revenue is disclosed on a quarterly basis in our Forms 10-K and 10-Q, along with details regarding our products and their performance, including the performance of our Google Network Members' properties (which include AdMob, AdSense, and Google Ad Manager). Recent filings are available at <https://abc.xyz/investor/>.

68. For each of the past five years, please identify the number of publishers in the U.S. that used DFP.

In 2018, more than 1.3 million businesses, website publishers, and nonprofits nationwide benefited from using Google's advertising solutions, Google Ads and AdSense. During previous years, the comparable numbers were 1.5 million in 2017, 1.5 million in 2016, and 1.4 million in 2015. More information regarding the number of publishers using Google's advertising solutions can be found in Google's annual economic impact reports. The most recent report, along with links to prior versions, is available at <https://economicimpact.google.com/>.

69. For each of the past five years, please identify the number of impressions served by DFP for publishers in the U.S.

Impressions for our Google Network Members' properties include impressions displayed to users served on Google Network Members' properties participating primarily in AdMob, AdSense for Content, AdSense for Search, and Google Ad Manager (includes what was formerly DoubleClick AdExchange).

Cost-per-impression is defined as impression-based and click-based revenues divided by our total number of impressions and represents the average amount we charge advertisers for each impression displayed to users.

As our business evolves, we periodically review, refine, and update our methodologies for monitoring, gathering, and counting the number of paid clicks on our Google properties and the number of impressions on Google Network Members' properties and for identifying the revenues generated by click activity on our Google properties and the revenues generated by impression activity on Google Network Members' properties.

For Google Network Members' properties, there was a 2% increase in impressions from 2017 to 2018 and a 12% increase in cost-per-impression during that same time period. Comparatively, there was a 3% increase in impressions from 2016 to 2017 and an 8% increase in cost-per-impression during the same period.

Additional information regarding impressions generated by Google is disclosed on a quarterly basis in our Forms 10-K and 10-Q. Recent filings are available at <https://abc.xyz/investor/>.

70. For each of the past five years, please identify the revenues paid to Google Network members.

One of Google's costs of revenues is what it refers to as traffic acquisition costs (TAC), which are paid to Google Network Members primarily for ads displayed on their properties and amounts paid to Google's distribution partners who make available the Company's search access points and services. Google's distribution partners include browser providers, mobile carriers, original equipment manufacturers, and software developers.

The cost of revenues related to revenues generated from ads placed on Google Network Members' properties are significantly higher than the cost of revenues related to revenues generated from ads placed on Google properties because most of the advertiser revenues from ads served on Google Network Members' properties are paid as TAC to our Google Network Members.

We have reported the following approximate TAC amounts over the past several years: \$26.7 billion for 2018, \$21.7 billion for 2017, \$16.8 billion for 2016, \$14.3 billion for 2015, and \$13.5 billion for 2014. TAC figures are further broken out into amounts paid to Distribution Partners and Google Network Members in our Form 10-K filings.

Information regarding our traffic acquisition costs is disclosed in our Forms 10-K. Recent filings are available at <https://abc.xyz/investor/>.

71. For each of the past five years, please identify the revenues paid to Google Network members, broken down by source, including but not limited to the following sources:

- a. Direct sales to advertisers;**
- b. Non-Google ad tech buyers;**
- c. Google Ads; and**
- d. Display and Video 360.**

One of Google's costs of revenues is what it refers to as traffic acquisition costs (TAC), which are paid to Google Network Members primarily for ads displayed on their properties and amounts paid to our distribution partners who make available our search access points and services. Our distribution partners include browser providers, mobile carriers, original equipment manufacturers, and software developers.

The cost of revenues related to revenues generated from ads placed on Google Network Members' properties are significantly higher than the cost of revenues related to revenues generated from ads placed on Google properties because most of the advertiser revenues from ads served on Google Network Members' properties are paid as TAC to our Google Network Members.

We have reported the following approximate TAC amounts over the past several years: \$26.7 billion for 2018, \$21.7 billion for 2017, \$16.8 billion for 2016, \$14.3 billion for 2015, and \$13.5 billion for 2014.

Information regarding our traffic acquisition costs is disclosed in our Forms 10-K. Recent filings are available at <https://abc.xyz/investor/>.

72. For each of the past five years, please identify the percentage of ad revenue generated by Google ad services that was retained by:

a. Publishers participating in AdSense; and

b. Publishers participating in AdX.

Overall, Google's advertising revenues for the past five years were approximately \$116.3 billion in 2018, \$95.4 billion in 2017, \$79.4 billion in 2016, \$67.4 billion in 2015, and \$59.6 billion in 2014.

We generate revenues primarily by delivering advertising on Google properties and Google Network Members' properties. Google properties revenues consist primarily of advertising revenues generated on Google.com, the Google Search app, and other Google owned and operated properties like Gmail, Google Maps, Google Play, and YouTube. Google Network Members' properties revenues consist primarily of advertising revenues generated on Google Network Members' properties. Our customers generally purchase advertising inventory through Google Ads (formerly

AdWords), Google Ad Manager as part of the Authorized Buyers marketplace (formerly DoubleClick AdExchange), and Google Marketing Platform (includes what was formerly DoubleClick Bid Manager), among others.

We offer advertising on a cost-per-click basis, which means that an advertiser pays us only when a user clicks on an ad on Google properties or Google Network Members' properties or when a user views certain YouTube engagement ads. For these customers, we recognize revenue each time a user clicks on the ad or when a user views the ad for a specified period of time.

We also offer advertising on other bases such as cost-per-impression, which means an advertiser pays us based on the number of times their ads are displayed on Google properties or Google Network Members' properties. For these customers, we recognize revenue each time an ad is displayed.

Our advertising revenue is disclosed on a quarterly basis in our Forms 10-K and 10-Q. Recent filings are available at <https://abc.xyz/investor/>.

73. Please identify any fees or other deductions that Google subtracts from the amounts paid by advertisers before calculating publishers' revenue and explain all the reasons for each fee or deduction.

Google retains an industry-competitive revenue share when publishers sell their inventory through Google's services such as Google Ad Manager's ad exchange feature, or Google's AdSense or AdMob services; the revenue share varies based on the specific services used by the publisher. In general, Google, like its competitors, charges more where it provides more services and value to its customers, and pricing may vary based on the specific customer's agreement with Google.

74. For each of the past five years, identify the percentage of impressions traded on AdX that are:

a. Sold to Google Ads; and

b. Sold to DV360 users.

Impressions for our Google Network Members' properties include impressions displayed to users served on Google Network Members' properties participating

primarily in AdMob, AdSense for Content, AdSense for Search, and Google Ad Manager (includes what was formerly DoubleClick AdExchange).

Cost-per-impression is defined as impression-based and click-based revenues divided by our total number of impressions and represents the average amount we charge advertisers for each impression displayed to users.

As our business evolves, we periodically review, refine, and update our methodologies for monitoring, gathering, and counting the number of paid clicks on our Google properties and the number of impressions on Google Network Members' properties and for identifying the revenues generated by click activity on our Google properties and the revenues generated by impression activity on Google Network Members' properties.

For Google Network Members' properties, there was a 2% increase in impressions from 2017 to 2018 and a 12% increase in cost-per-impression during that same time period. Comparatively, there was a 3% increase in impressions from 2016 to 2017 and an 8% increase in cost-per-impression during the same period.

Additional information regarding impressions generated by Google is disclosed on a quarterly basis in our Forms 10-K and 10-Q. Recent filings are available at <https://abc.xyz/investor/>.

75. Please identify all the types of data that Google provide to publishers who participate in Google Ads.

Google Ads is the interface Google provides for advertisers to access Google's owned-and-operated and AdSense inventory. For those advertisers, Google does provide publishers a number of data-driven metrics, depending on the Google publisher tool being used, that are designed to help publishers capture advertising revenue more efficiently across all of their inventory. Such metrics include the following:

- **Impressions** – An ad impression is reported whenever an individual ad is displayed on a website. For example, if a page with two ad units is viewed once, two impressions will be displayed.
- **Coverage** – Coverage is the percentage of ad requests that returned at least

one ad. Generally, coverage can help identify sites where an account is not able to provide targeted ads.

- **Monetized Pageviews** – Measures the total number of pageviews on a property that were shown with an ad from a linked account. A single page can have multiple ad units.
- **Impressions / Session** – The ratio of ad impressions to Analytics sessions.
- **Viewable Impressions Percentage** – The percentage of ad impressions that were viewable. An impression is considered a viewable impression when it has appeared within a user’s browser and had the opportunity to be seen.
- **Clicks** – The number of times ads were clicked on a site.
- **Click-Through Rate (CTR)** – The percentage of impressions that resulted in a click on an ad.
- **Revenue** – Revenue is an estimate of the total ad revenue based on impressions served.
- **Revenue / 1000 Sessions** – The total estimated revenue from ads per 1000 Analytics sessions. Note that this metric is based on sessions to a site and not ad impressions.
- **eCPM** – The estimated cost per thousand page views.

Because providing clear, comprehensive reporting is a big part of helping publishers make smarter decisions to grow their earnings, Google periodically introduces new types of data reporting that can be provided to publishers. For example, we are testing a new data file, the “Bid Data Transfer file,” that gives publishers access to data from all the bids submitted to their auctions. Publishers are able to see the full bid landscape through this beta feature.

A more complete listing of available metrics is provided on Google’s Ad Manager Help page available at <https://support.google.com/admanager/table/7568664?hl=en>.

Publishers can also link to their Analytics accounts to receive additional types of data.

Analytics reports provide a variety of dimensions and metrics. Dimensions are attributes of a site's data. For example, the dimension "City" indicates the city from which a session originates; "Page" indicates the URL of a page that is viewed. Metrics are quantitative measurements. For example, the metric "Sessions" is the total number of sessions and "Pages/Session" is the average number of pages viewed per session. A more complete listing of data available through Analytics is available on Google's Analytics Help at <https://support.google.com/analytics/answer/1033861>.

76. Does Google provide publishers with log-level data on prices paid by advertisers? If no, please explain all the reasons why.

Yes, in addition to the rich Google Ad Manager data reporting discussed in response to Question No. 75, Google enables publishers using Google Ad Manager 360, Google's premium supply-side ad server, to generate non-aggregated event-level data reports regarding the ads served on their sites. Publishers can set up these data transfer reports to include dozens of different data points about impressions, clicks, and other events transmitted through Google Ad Manager, including Open Bidding auction bids data.

Included among those potential data fields is "BidPrice," which shows the offered price for the bid after revenue sharing calculations, displayed in the Ad Manager network's default currency.

77. Does Google give advertisers the opportunity to share log-level data with publishers? If no, please explain all the reasons why.

Yes, Google does allow some non-aggregated event-level data to be shared with publishers. Google enables publishers using Google Ad Manager 360, Google's premium supply-side ad server, to generate non-aggregated event-level Data Transfer reports regarding the ads served on their sites. Publishers can set up these Data Transfer reports to include dozens of different data points about impressions, clicks, and other events transmitted through Google Ad Manager. We are also beta testing a new data file, the "Bid Data Transfer file," that gives publishers access to data from all the bids submitted to their auctions. Publishers are able to see the full bid landscape through this beta feature.

Third party exchanges and SSPs are also free to establish relationships with publishers outside of Google's ad tech products and can, and generally do, provide reporting

directly to the publisher in those cases for impressions won by the third party exchange or SSP and served by Google's Ad Manager.

78. Please describe how Google Ads converts the winning cost-per-click (CPC)-based bid into a cost-per-mille (CPM)-based bid in AdX.

Google Ads is designed to facilitate advertisers using different bid strategies depending on whether the advertiser wants to focus on getting clicks, impressions, conversions, or views. The advertiser is free to determine which strategy is best for it based on its advertising goals. When advertiser CPC and CPM ad bids compete for the same impression, Google converts CPC bids to effective CPM bids to make an "apples-to-apples" comparison of the price the competing advertisers are effectively willing to pay for the impression. To convert a CPC bid to an effective CPM bid, Google estimates how many clicks the ad might receive in 1,000 impressions to get the comparison.

79. Please identify whether the CPC-to-CPM conversion is informed by Google Ad Manager historic data or real-time data and explain why.

This conversion is informed by both historic data and real-time data. The CPC-to-CPM conversions utilize various prediction models to calculate the predicted click-through rates. Historical data is used to train the prediction models, and then those prediction models utilize real-time data to generate the predicted click-through rates.

80. Please describe how Google calculates the click-through-rate (CTR) of an ad.

The click-through rate is a ratio that shows how often people who see an advertiser's ad end up clicking on it. Google Ads provides advertisers with CTR so they can gauge which of their ads are successful and which need to be improved. The CTR is calculated as the number of clicks an ad receives divided by the number of times the ad is shown, which is publicly described on our website at https://support.google.com/google-ads/answer/2615875?hl=en-GB&ref_topic=24937. For example, if an ad receives 5 clicks and 100 impressions the CTR would be 5%. Google similarly calculates a viewable CTR for display and video ads that are trackable by Active View. Active View is a technology on YouTube and certain Display Network websites and apps that allows Google Ads to determine if an ad is viewable by

potential customers. The viewable CTR is equal to the number of clicks an ad receives divided by the number of times the ad becomes viewable on a website or app. For more information, please see “Understanding viewability and Active View reporting metrics” available at <https://support.google.com/google-ads/answer/7029393?hl=en>.

81. Google states that AdX may, “at its discretion,” make adjustments to the bid submitted by the buyer “for the purpose of optimizing the auction.” Please describe how Google exercises this discretion.

Google Ad Manager’s ad exchange feature is designed to help publishers optimize revenue from their ad sales. There are two common situations where Google may make adjustments to optimize the auction process for advertisers and publishers. First, Google may apply optimization to video ads in which the billing event that triggers payment occurs later than some other ads (i.e., when the first frame of the video plays) and can help avoid the situation where an unreliable ad server fails to serve an ad at all, causing the publisher to lose out on revenue. The second typical scenario is where a publisher has elected to use the revenue-share optimization account setting, which is optional and meant to facilitate sales (“Configure your Ad Exchange revenue share,” available at <https://support.google.com/admanager/answer/7031785?hl=en>). Google is always looking for ways to enhance its product options for publishers and advertisers, including Google Ad Manager, and will continue to do so.

82. Please identify what duties Google Ads has towards publishers when Google engages in brokerage and trading activities in the marketplace for digital ads.

Google Ads is the buying interface Google provides for advertisers to access and purchase Google’s owned and operated (O&O) and AdSense inventory; it is not a publisher tool. Furthermore, Google does not engage in “brokerage and trading activities” with respect to digital ads. Rather, Google’s ad tech products provide the infrastructure through which advertisers and publishers connect with one another, and execute the buying and selling strategies specified by advertisers and publishers, respectively. Google is always looking for ways to enhance its product options for publishers and advertisers, including Google Ads, and will continue to do so.

83. Please identify what duties Google Ads has towards advertisers when Google engages in brokerage and trading activities in the marketplace for digital ads.

Google Ads is the buying interface through which advertisers can purchase Google's owned and operated (O&O) and represented inventory. Google Ads is, primarily, Google's storefront for this inventory, not a demand-side platform that facilitates real-time bidding and optimization across different sources of supply.

Google does not engage in "brokerage and trading activities" with respect to digital ads. Rather, Google's ad tech products provide the infrastructure through which advertisers and publishers connect with one another, and execute the buying and selling strategies specified by advertisers and publishers, respectively.

84. Please identify and describe any contractual limitations or legal requirements that prevent Google Ads from buying ads for the minimum amount possible and selling them for the maximum amount possible.

Google Ads does not buy ads or ad space; it is the interface Google provides for advertisers to buy Google's owned-and-operated and AdSense inventory. That is, at no point does Google Ads hold third-party inventory it has purchased from publishers and then sell that ad space to advertisers. Google's advertising technology solutions connect publishers with advertisers, with Google charging a fee to buyers, and taking a revenue share percentage from the amount paid to publishers. Google's advertising technology solutions are designed to allow advertisers and publishers of all sizes to choose the right solutions for their businesses, making it even easier for them to deliver valuable, trustworthy ads and the right experiences for consumers across devices and channels.

85. Are Google Search ad inventories available to advertisers that do not participate in Google Ads? If no, please explain why.

Advertisers who wish to use Google Ads start by creating a free Google Ads account. After creating that account, advertisers can manage their search ads campaigns on Google's platforms either directly on Google Ads or by using their choice of advertising management platform, including Google's Search Ads 360 product or third-party services (e.g., Kenshoo). Google Ads is fully interoperable with such third-party services.

86. Has Google ever threatened to remove a producer’s video content from YouTube if the producer did not permit YouTube to sell ads on the producer’s video? If yes, please describe the relevant circumstances.

YouTube content creators have a variety of ways they can earn money on YouTube, including by selling advertising, channel memberships, merchandise, messaging features, and by sharing in YouTube Premium subscriber fees. Whether a YouTube creator chooses to display ads, or monetize their content, is completely up to them. By default, YouTube channels are not monetized. Instead, a creator must apply to join our YouTube Partners Program, which has specific requirements for participation. For more information, please see

https://support.google.com/youtube/topic/9153567?hl=en&ref_topic=9257986,323081,1,3256124. After a creator has opted in to monetization, YouTube permits content

creators to turn off ads for any video they have uploaded or for their entire channel.

For more information, please see

<https://support.google.com/youtube/answer/6332943?hl=en>.

87. Is the YouTube ad inventory available to advertisers that do not participate in DV360? If no, please explain why.

Yes, YouTube ad inventory is available to these advertisers through:

- **Direct Reservation:** A direct contract is negotiated between the advertiser and Google. These can be booked directly through the YouTube sales team.
- **YouTube Partner Sales Program:** Certain YouTube partners work directly with advertisers to sell and serve ads on content they own and show on YouTube.
- **Google Ads:** Advertisers can purchase YouTube inventory through Google Display Ads. Advertisers can also display search ads on YouTube search results.

In addition to serving video ads on YouTube, an advertiser has a multitude of other options for serving video ads to users, as video ads are shown on many news websites, social media sites, mobile applications, streaming services, connected TVs, and more.

88. Does Google Ads ever purchase third-party ad inventory through non-Google platforms? If yes, please describe the relevant circumstances.

Google Ads does not itself purchase third-party ad inventory; however, advertisers can use Google Ads to purchase third-party ad inventory through the Google Display Network or through third-party exchanges.

89. Please identify if and describe how the level of interoperability between AdX and Google Ads differs from the level of interoperability between AdX and non-Google demand-side platforms.

Google Ads is the buying interface through which advertisers can purchase Google's owned and operated (O&O) and represented inventory. Google Ads is, primarily, Google's storefront for this inventory, not a demand-side platform that facilitates real-time bidding and optimization across different sources of supply.

Google's demand-side platform is known as DV360. DV360 helps advertisers and agencies bid on ad impressions in real time across ad exchanges and provides them with various campaign management, audience targeting, ads measurement, and reporting tools. Numerous advertisers have utilized DV360 with great success (examples can be found at: <https://marketingplatform.google.com/about/resources/success-stories/>). While both Google Ads and DV360 are able to pass bids into Google Ad Manager's ad exchange feature alongside bids from third party buyers, Google Ads and DV360 serve different purposes.

90. Please identify if and describe how the level of interoperability between AdX and DV360 differs from the level of interoperability between AdX and non-Google demand-side platforms.

Google Ad Manager's ad exchange feature (formerly a stand-alone product known as DoubleClick Ad Exchange or "AdX") is designed to help publishers optimize revenue from their ad sales through real-time bidding for ad impressions on their sites. Many third-party demand-side platforms can purchase ad inventory through Google Ad Manager's ad exchange. In practice, there are very limited differences in interoperability when Google Ad Manager is used with DV360 versus third-party demand-side platforms. Google uses industry-standard protocols designed to make it straightforward for demand-side platforms to integrate with Google Ad Manager's ad exchange feature in a similar way to how they integrate with other exchanges.

While the level of interoperability does not differ by design, there are some differences that can result from technical realities. The main potential differences are an improved cookie matching rate and decreased latency. Any such differences are due to Google's products sharing the same technical infrastructure and would be the natural and beneficial result of vertical integration, though we don't believe any such differences have meaningfully affected the ability of third-parties to compete, in part because Google Ad Manager's ad exchange offers buyers a cookie matching service and the auction window remains open long enough to account for any such latency differences.

91. Please describe how Google Ads allocates bids from "Display Network only" and "Search Network with Display Select" campaigns between Google's display inventory and third-party inventory.

The Display Network is Google's advertiser-facing name for Google's ad network, which helps third-party publishers monetize and efficiently sell ad space on their sites (the publisher-facing name for this product is "AdSense"). When a Google Ads advertiser enables a "Search Network with Display Expansion" campaign (formerly known as "Search Network with Display Select"), the advertiser's ads still primarily appear on the Search Network. However, when Google Ads projects that the advertiser will have funds remaining in its daily budget, the ad may show on relevant pages within the Display Network. Advertisers can control the sites on which their ads are placed by adding targeting settings, including by identifying audiences of interest or expressly including or excluding particular websites. Using those settings, an advertiser could, if desired, either limit its ads to or prevent its ads from showing on particular Google-owned display inventory.

92. Please describe how Google Ads allocates bids between AdSense inventory and AdX inventory.

AdSense, Google's ad network, helps third-party publishers monetize and efficiently sell ad space on their sites. Google Ads does not pre-allocate bids between AdSense and Google Ad Manager's ad exchange; instead, where Google Ads-sourced ads are shown is determined by whether the Google Ads advertiser opts to show its ads on the Display Network, the (essentially random) order in which impressions come up for auction, and the results of those auctions run within Google Ads and Google Ad Manager's ad exchange. As long as an advertiser using Google Ads has targeted the Display Network for its campaign, its ads can appear on inventory that is sold via

Google Ad Manager's ad exchange in addition to inventory that is sold through Google AdSense. While the amount of potential inventory expands by including the Display Network as a target, the Google Ads reporting and other account processes remain the same.

93. Please explain all the reasons why Google switched to a unified price auction.

We believe that this question's reference to a "unified price auction" refers to the "unified first-price auction" to which Google is currently transitioning Ad Manager. Historically, Ad Manager often ran two different auctions for a given ad impression: a second-price, real-time bidding auction followed by a first-price auction that compares the winning price from the second-price auction with the publisher's direct and indirect options, as well as bids from Exchange Bidding buyers.

In an effort to reduce complexity and provide value to its partners, Google is transitioning Ad Manager to a unified first-price auction. The first-price auction will allow Google's publisher partners to maximize yield from their ad auctions, while also allowing its advertiser partners to maximize return-on-ad-spend.

The unified first-price auction will provide a more straightforward process as all integrated demand sources will be providing the same type of bid at the same time and therefore will have the same opportunity to compete for ad inventory. It also will increase transparency for advertisers and publishers as Ad Manager partners will share and receive bid data that, in turn, permits Google to provide more granular reports. For example, Google will be able to report to advertisers how much they would have needed to bid to have won an auction.

Finally, Google is also moving to a unified first-price auction to be in line with the broader industry, as many other auctions are now first-price.

94. Please explain how the switch to a unified price auction has affected Google's business, including but not limited to how the switch to a unified price auction has affected AdX and/or any other platform for real-time bidding.

We believe that this question's reference to a "unified price auction" refers to the "unified first-price auction" to which Google is currently transitioning Ad Manager. Because the change will, among other things, reduce complexity, increase

transparency, and decrease auction inefficiencies, Google expects that it will benefit the entire ecosystem and will, as a result, make Ad Manager more attractive for publishers. Indeed, several publishers and industry participants, including Trusted Media Brands, MailOnline, MediaMath, VICE Media, and Rubicon Project, have publicly applauded the transition. For more information, please see “An update on first price auctions for Google Ad Manager,” available at <https://www.blog.google/products/admanager/update-first-price-auctions-google-ad-manager>.

Google has conducted preliminary tests of the change that showed that first-price auctions have a neutral to positive impact on a publisher’s total revenue — revenue from all their advertising sources — when compared to second price-auctions. Google also found evidence that first-price auctions have created a more competitive market, resulting in third parties (Demand Side Platforms and Ad Networks outside of Google) and indirect line items (like those from Header Bidding implementations) winning an increased share of impressions.

95. Does AdX provide access to real-time bids to non-Google ad servers? If no, please explain why.

Google Ad Manager’s ad exchange (AdX) feature operates in combination with third party ad servers through Google Publisher Tag (GPT) passbacks and AdX direct tags. The third party ad server can make a call to AdX, using a GPT passback or AdX direct tag, to serve an ad matching specified targeting criteria. The Ad Manager ad server will then return an ad that matches the specified targeting criteria.

Google Ad Manager’s ad exchange feature does not directly bid into auctions run by third party ad servers. A publisher using a third party ad server would have to assign a static CPM price or serving priority to the Google ad exchange demand. The third party ad server can then integrate that demand dynamically in to their creative selection decisions. That said, most demand sources (ad networks, ad exchanges and demand-side platforms) that submit real-time bids on AdX (including DV360 and Google Ads), also submit real-time bids on third-party SSPs.

96. Does AdX participate in header-bidding? Please explain why or why not.

No. Google Ad Manager’s ad exchange feature does not participate in header bidding auctions. Google Ad Manager’s ad exchange feature is designed to help publishers

optimize revenue from their ad sales while still providing a great experience for the end user. Header bidding uses complex custom code that causes latency for websites or apps and is a suboptimal user experience. Google introduced Open Bidding to solve these issues, which is described at <https://support.google.com/admanager/answer/7128453?hl=en>.

97. Please identify all types of data that Google collects on users who visit websites that use Google Ad Manager.


Google's Privacy Policy explains what information Google collects, why Google collects it, and how users can update, manage, export, and delete their information (<https://policies.google.com/privacy>). We also have invested significantly to give users access and control over their data and would encourage Google users to visit Google Account (<https://myaccount.google.com/>). As with all of our user privacy controls, our goal is to make things as simple as possible while ensuring that users have meaningful control over their data.







The types of data Google collects or stores may be different for users based on various settings the user has selected and what products they use. But we make it easy for users to review their data, change their settings, and delete data, and offer a series of tools to enable users to make informed decisions about their data. In fact, we were one of the first companies to offer users a centralized portal to see and manage their data through easy-to-use tools with the launch of MyAccount in 2015 (now Google Account). For instance:

- The Data and Personalization section of Google Account allows users to turn on or off features, like Location History, and to opt in or out of ads personalization (<https://myaccount.google.com/data-and-personalization>).

Activity controls

You can choose to save your activity for better personalization across Google. Turn on or pause these settings at any time.





 Web & App Activity	 Paused	>
 Location History	 Paused	>
 YouTube History	 Paused	>

[Manage your activity controls](#)

Ad personalization



You can make ads more useful to you



 **Ad personalization**
Ads on Google aren't personalized
 Off

[Go to ad settings](#)

Activity and timeline

See the activity saved in your account and the places you've been. You can delete any or all your past activity.

 **My Activity**
Rediscover the things you've searched for, read, and watched 

 **Timeline**
See where you've been based on your Location History 

- The Privacy Checkup tool also makes it easy for users to review and change their privacy settings (<https://myaccount.google.com/privacycheckup>).



Privacy Checkup

Review key settings & the data Google uses to personalize your experience

✓	Activity controls reviewed	▼
✓	Phone numbers reviewed	▼
✓	About you reviewed	▼
✓	Ad settings reviewed	▼

When you're done, also consider reviewing your settings in the products you use most, like Maps, YouTube, and Gmail

Personalize your Google experience

Choose whether to save activity data in your Google Account for faster and more useful Google services, like better commute options in Maps and quicker results in Search



Web & App Activity (Paused)

Used by Assistant, Google Maps, and others

If you turn this setting on, Google will save your activity on Google sites and apps in your Google Account, including searches and associated info like location. You can also choose to save which apps you use, your Chrome history, and which sites you visit on the web.

This can help Google to give you faster results by autocompleting searches, as well as personalized experiences in Maps, Assistant, and other Google services. [Learn more](#)

[Manage Web & App Activity](#)



Location History (Paused)

Used by the Google app, Google Maps, and others

If you turn this setting on, Google will create a private map of where you go with your signed-in devices, including how long and how often you visit and how you travel between places, even when you aren't using a specific Google service. This map is only visible to you.

This gives you improved map searches and commute routes, as well as helping you to rediscover the places you've been and the routes you've travelled. [Learn more](#)

[Manage Location History](#)



Voice and audio recordings (Paused)

Used by Assistant, Google Maps, and others

If you turn this setting on and use voice commands (such as "Ok Google") or touch the microphone icon, Google will save a recording of your voice and other audio inputs.

Google can use this data to improve its speech recognition so it can understand you better.

[Learn more](#)

[Manage voice and audio recordings](#)



YouTube Search History (Paused)

Used by YouTube, Google Assistant, and others

If you turn this setting on, Google will save your YouTube searches to your Google Account.

This can help make future searches faster and improve recommendations in YouTube and other Google services. [Learn more](#)

[Manage YouTube Search History](#)



YouTube Watch History (Paused)

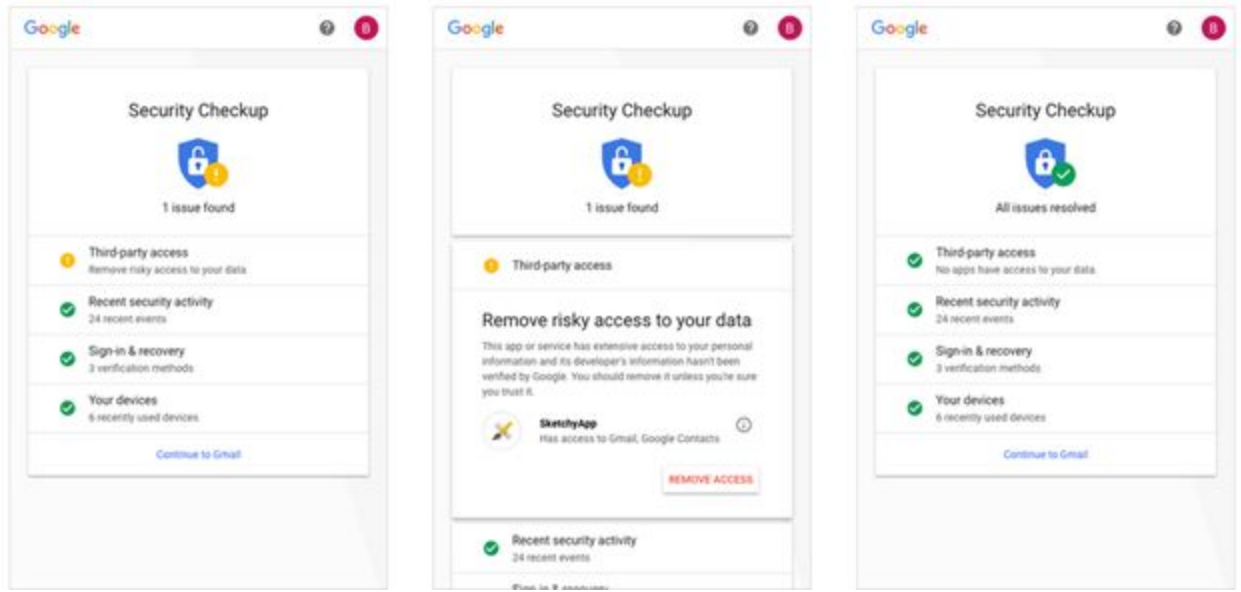
Used by YouTube, Google Assistant, and others

If you turn this setting on, Google will save the YouTube videos you watch to your Google Account.

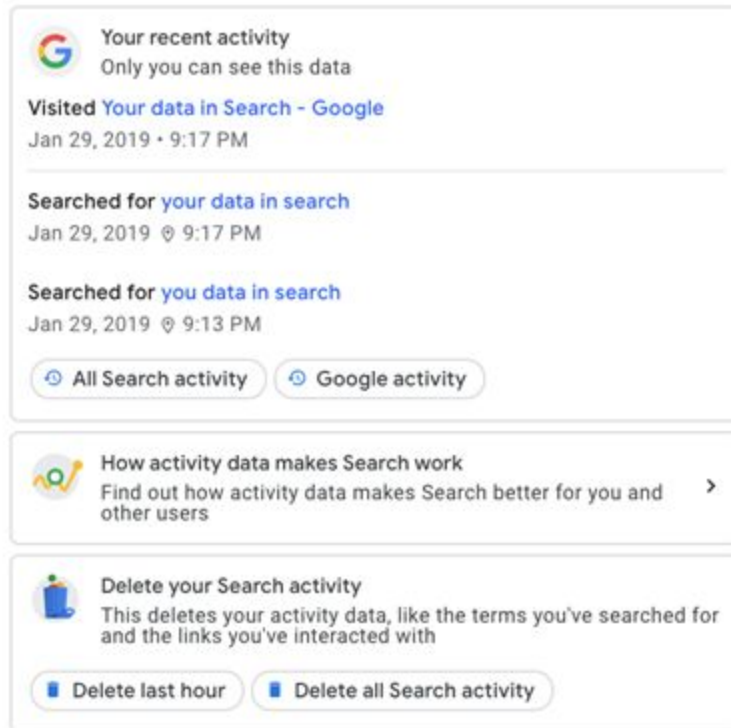
This can help make your recently watched videos easier to find and improve recommendations in YouTube and other Google services. [Learn more](#)

[Manage YouTube Watch History](#)

- Google's Security Checkup helps users make informed decisions about security and privacy, including by identifying the apps that have access to their data and letting them revoke access to those apps (<https://myaccount.google.com/security-checkup>).



- We also recently launched “Your Data in Search,” which enables users to browse and delete their Search activity directly for the past hour (or even entirely) without navigating away from what they’re doing (<https://myactivity.google.com/privacyadvisor/search>).



- Finally, Google’s in-product disclosures and help center pages, as well as Google Help Forum, provide users with further resources to learn more about exercising granular control over settings that affect the collection and sharing of their data.

As to websites that use AdManager, Google collects certain user data when its advertising servers receive a request from a user's device (General User Data). This request is triggered by the user interacting with a third party website or app that uses a Google advertising service. Depending on the publisher’s settings, the user’s preferences and the device in question, the collected data may include:

- The request itself, such as the browser’s request for an ad to be served on a non-Google website and the ad slot to be filled;
- System and device information, such as the device, browser version, operating system version, default language and screen size;
- IP address;
- Location;
- The date and time of the request;
- In the case of web browsers, the full URL of the page being visited together with the referrer URL;
- In the case of mobile devices, mobile network information;
- In the case of mobile applications, an identifier for the application and a resettable mobile advertising identifier (such as IDFA for iOS or AdID for Android);
- In the case of web browsers, any cookie IDs that Google has previously set on the user’s device; and
- Event data such as impression, click, or conversion data.

Google Ad Manager may also collect such data through tags on the publisher's property or the Google Mobile Ads software development kit (SDK) on the user's app. It can also collect publisher-provided IDs. In addition, Google Ad Manager allows publishers to integrate audience data, such as audience lists and lists of cookie IDs with inferred interests, from their own data management platform.

98. Please describe how Google uses any user data that it collects through Google Ad Manager including but not limited to identifying whether any of this data is used by Google Ads.

At Google, we design our products to collect and use data commensurate with their purpose and to keep that data no longer than necessary. These principles are reflected in all of our products. Google believes strongly in building products that make it easy for individuals to control the use of their personal information, and we provide extensive tools to give our users choice and control over their data, as explained above in response to Question No. 97. Maintaining user trust is extremely important to us, and we will continue to work hard to ensure that we only collect and use data required to provide our users with the services that they want.

In line with those principles, Google Ad Manager collects data to provide the relevant services, including:

- To serve and personalize ads (including remarketing) subject to the user's settings;
- To maximize publisher yield through optimizations and real time bidding;
- To enable frequency capping (i.e., to ensure that users are not served the same ad multiple times);
- To enable sequential creative rotation (i.e., to show a set of ads to users in a specific sequence);
- To apply publisher configurations and rules, such as protections, blocks and minimum prices;
- To forecast available traffic (e.g., the number of potential ad impressions available to an ad campaign targeted to a specific country or device type); and
- To measure ad performance (e.g., how many ads were served and how many

clicks those ads received) and provide reporting.

Google uses common protocols to ensure all buyers receive broadly the same information as Google Ads and respond to a uniform bid request. Google's RTB technology is underpinned by two frameworks: IAB's OpenRTB protocol (an industry-standard protocol) and Google's Authorized Buyers RTB protocol. Buyers can elect to use either protocol.

99. Please indicate whether Google has the ability to collect user data and/or use first-party identifiers on non-Google websites after users opt to remove the use of third-party cookies on:

a. Safari 12; or

b. Chrome.

In addition to the information provided in response to Question Nos. 97 and 98, above, if a publisher chooses to use Ad Manager, the ad request it sends to Ad Manager may make first-party cookie data available to Google Ad Manager if a user is using either browser, but such first-party cookie data is not used to track users across websites.

100. When Google purchased DoubleClick in 2007, Sergey Brin stated that privacy would be Google's "number one priority when we contemplate new kinds of advertising products." Yet in 2016, Google began combining DoubleClick cookie information with personally identifiable information collected through Gmail and other tools. How does Google reconcile Mr. Brin's claimed support for privacy with Google's decision to combine forms of data in ways that undermine user privacy?

Google strongly believes in protecting user privacy and security and strives to be a leader in this area. This goal is central to how we design and build our products: to ensure that our products are safe, invest in technologies that allow us to do more for users with less data, and empower users with clear, meaningful choices around their data. That is why no Google product that involves personal data can launch without the approval of our privacy team.

Google has not combined unauthenticated data from our ads products with users' personally identifiable information. Rather, in 2016 we updated our ads system, and

the associated user controls, to allow users the opt-in choice to save their visits to websites and apps that use Google ad services to their account history. This allowed better transparency and controls for users, and better ad measurement and personalization for Google. Before we launched this update, we tested it around the world with the goal of understanding how to provide users with clear choice and transparency. If users did not opt-in to these changes, their Google experience remained unchanged. We also provided prominent user notifications about this change in easy-to-understand language as well as simple tools that let users control or delete their data.

We also have invested significantly to give users access and control over their data and encourage Google users to visit Google Account (<https://myaccount.google.com/>). Users can access all their account controls by visiting Google Account, which had over 2.5 billion visits in 2018. As with all of our user privacy controls, our goal is to make things as simple as possible while ensuring that users have meaningful control over their data.

101. Please describe how Google’s decision to combine DoubleClick cookie information with personally identifiable information has affected Google’s business, including but not limited to its effects on any changes in Google’s ad revenue.

As discussed above in Question No. 100, Google strongly believes in protecting user privacy and security and strives to be a leader in this area. Our investment in privacy and security is evident in every product we build, including the powerful tools we provide to help our users make decisions about their data.

With respect to Doubleclick, Google has not combined its unauthenticated ads data, whether from DoubleClick products or otherwise, with any personally identifiable information. Google’s only step in this regard, taken in the beginning in 2016, was to seek the express, opt-in consent of its users to enable certain web and app browsing information to be associated with a user’s account. Existing users were expressly prompted to make an election, while new users were presented an additional choice in their new account setup flow. Existing data was not moved or consolidated, and Google’s Privacy Policy was updated to reflect that “depending on your account settings your activity on other sites and apps may be associated with your personal information in order to improve Google’s services and the ads delivered by Google.”

For more information, please see our Privacy Policy, available at <https://policies.google.com/privacy?hl=en-US>.

102. Please identify what specific steps a user can take to prevent Google from combining the user’s DoubleClick data from the user’s personally identifiable information. Please identify the exact number of clicks that a user must make in order to achieve this setting.

Google’s users have long entrusted us to be responsible with their data, and we take that trust and responsibility very seriously. Google’s goal is to help users enjoy the benefits of technology, while remaining in control of their privacy. Google works to build controls that are easy to use, so users can choose the privacy settings that are right for them. As discussed above in Question Nos. 100-101, in 2016 we added an additional opt-in to user settings to enable certain information to be associated with a user’s account, such that if any user who took no action or declined the opt-in would not need to take any further steps. For users who accepted the opt-in, or for users who established a new account after the change, turning off this feature would require only that they visit their Google Account page, and un-check the ads personalization control or the box next to “Include Chrome history and activity from websites and apps that use Google services” in the Web & App Activity panel. Every day, nearly nearly 20 million people visit the Google Account page.

103. Please share all findings and reports issued by the Media Ratings Council about Google’s products since 2017.

We are aware of the following Media Ratings Council (MRC) reports, which have been issued since 2017 and mention at least one Google product:

- *Media Rating Council Accreditation Status Updates, October 2016 Through December 2016*, issued January 4, 2017, <http://mediaratingcouncil.org/010417%20MRC%20Accreditation%20Status%20Communication.pdf>
- *Media Rating Council Accreditation Status Updates, January 2017 Through March 2017*, issued April 6, 2017, <http://mediaratingcouncil.org/040617%20MRC%20Accreditation%20Status%20Communication.pdf>

- *Status Update: MRC Auditing of Google's YouTube Measurement Platform*, issued June 28, 2017,
http://mediaratingcouncil.org/062817_MRC%20Statement%20on%20Status%20of%20Google%20YT%20audit_FINAL.pdf
- *MRC Update on General Invalid Traffic (GIVT) Compliance Status of Accredited Digital Vendors*, issued June 30, 2017,
<http://mediaratingcouncil.org/June%202017%20MRC%20GIVT%20Status%20Report%20for%20Accredited%20Digital%20Vendors.pdf>
- *Media Rating Council Accreditation Status Updates, April 2018 Through June 2018*, issued July 9, 2018,
<http://mediaratingcouncil.org/070918%20MRC%20Accreditation%20Status%20Communication.pdf>
- *Media Rating Council Accreditation Status Updates, July 2018 Through September 2018*, issued October 9, 2018,
<http://mediaratingcouncil.org/100918%20MRC%20Accreditation%20Status%20Communication.pdf>
- *Media Rating Council Issues an Update on the Begin to Render (BTR) Compliance Status of Each Vendor Accredited for Display Served Ad Impressions*, issued June 18, 2019,
<http://mediaratingcouncil.org/MRC%20Render%20Status%20Report.pdf>
- *Media Rating Council Accreditation Status Updates, July 2019 Through September 2019*, issued October 8, 2019,
<http://mediaratingcouncil.org/100819%20MRC%20Accreditation%20Status%20Communication.pdf>

104. What is the prevalence of ad fraud in digital advertising markets?

Every day, we invest significant team hours and technological resources in protecting the users, advertisers, and publishers that make the internet so useful. For example, we took down 2.3 billion bad ads in 2018 for violations of both new and existing policies or more than six million bad ads each day.

Ad fraud can take many forms, but essentially, it is any ad interaction that is meant to increase ad traffic while pretending to be genuine, but does not come from real people with real interest in an ad. Ad fraud includes, but is not limited to, the following examples:

- a publisher paying users to manually click on ads, watch videos, or view content the user would not normally engage with (i.e., a “click farm”);
- software that hijacks computers to create non-human traffic and clicks;
- running hidden browsers on a user’s computer to automatically visit ad sites;
- software that can be purchased or programmed to automate click activity; and
- hiding invisible ads on a website or manipulating their position to cause users to click them unintentionally.

While ad fraud is a serious problem affecting all participants in the digital advertising space and Google is steadfast in its efforts to combat it, Google does not systematically collect industry-wide statistics relating to prevalence.

Google does, however, provide other statistics that point to the scale of the problem of invalid traffic and publisher policy violations on Google services. Google details its efforts in 2018 and shares some of this data in its annual Bad Ads Report, which was published most recently in March 2019 at <https://www.blog.google/products/ads/enabling-safe-digital-advertising-ecosystem/>. As discussed in that report, in 2018 Google terminated nearly a million bad advertiser accounts (double the amount from 2017) and worked with law enforcement agencies, including the Federal Bureau of Investigation, to take down one of the biggest ad fraud operations ever.

105. What specific steps does Google take to detect ad fraud?

106. What specific steps does Google take to prevent ad fraud?

Because the answers to these questions are related, we’ve grouped together our response to Question Nos. 105-106.

Detecting and preventing ad fraud are issues Google takes very seriously. Google has a crucial stake in a healthy and sustainable digital advertising ecosystem — something we've worked to enable for nearly 20 years. Google relies on a combination of real-time (pre-bid) and after-the-fact (post-serve) automated filters, complex algorithms, and manual analysis by Google's team of data scientists, engineers, and analysts to protect advertisers and to detect and prevent ad fraud:

- **Pre-bid filtering:** This relies on real-time analysis of ad traffic to determine whether that traffic is valid or not.
- **Post-serve filtering:** This relies on analysis of ad traffic after an ad event occurs (e.g., an impression or click). Post-serve filtering is necessary to detect some types of invalid traffic that cannot be detected through pre-bid filtering.
- **Manual review:** There is also manual review of issues flagged by advertisers, publishers, and automated systems, and periodic review of the automated filters. When invalid traffic is identified, the data is generally used to update and improve the automated filters.

107. In what instances does Google inform advertisers that their ad spend has been affected by ad fraud? Please describe the relevant circumstances.

Google takes this issue seriously and strives to protect advertisers from ad fraud. Our work to protect users and enable a safe advertising ecosystem that works well for legitimate advertisers and publishers continues to be a top priority. To that end, Google employs a large array of automatic and manual ad fraud detection and elimination techniques. Some of these tools eliminate ad fraud before an ad is even served, while others make automatic adjustments to user billing accounts where Google detects that an ad fraud attempt has made it past Google's filters. Advertisers can then access reports that explain the adjustments made by Google. Should the advertiser suspect that ad fraud went undetected by Google's systems, advertisers can request further ad fraud investigations via Google's online forms or reach out to their account teams directly.

108. What processes does Google have in place to provide refunds to advertisers affected by ad fraud through Google?

As we continue to protect users from bad ads, we also work to make it easier to support advertisers. Google helps protect advertisers from invalid traffic by working to isolate and filter out potentially invalid interactions before they ever reach advertisers' account reports. To minimize the negative impact, Google removes invalid clicks and impressions produced both by automated services (non-human users) and human traffic that does not arise from genuine user interest. Depending on when the traffic is identified as invalid, Google will filter it either before inventory is bid on, or after an event occurs (like a click or impression). Traffic that is filtered pre-bid is never bought because it was not bid on, and so does not require a refund, and traffic that is filtered post-serve is not paid for because it is credited back to the advertiser's account. In the event that an advertiser suspects that invalid traffic was not detected by Google, the advertiser can request an investigation from Google. Google will then investigate the request, and issue credits for invalid traffic as appropriate.

109. Please identify the non-Alphabet services that advertisers can use to:

a. Assess the success of their ad campaigns on Google; and

Consistent with our efforts to promote interoperability in balance with privacy, ad fraud prevention, and security, we have partnered with many third-party providers to support measurement offerings that are independent from Google. Supporting these third-party offerings promotes user choice — a key to Google's success — as to which tools they choose to use in verifying their advertising campaigns' success. Advertisers' third-party measurement offering options include:

1. Adjust
2. Adways
3. Analytic Partners
4. Appsflyer
5. comScore
6. CyberZ
7. Data2Decisions
8. DoubleVerify
9. Dynata
10. Ekimetrics
11. Innovid
12. Integral Ad Science

13. IRI
14. Kantar
15. Kochava
16. Marketing Management Analytics
17. Meetrics
18. Moat (Oracle)
19. Neustar
20. Nielsen
21. Nielsen Catalina Solutions
22. Oracle Data Cloud
23. Singular
24. Sizmek (Amazon)
25. Tune

Google's integrations with some of the above third-party measurement partners are currently undergoing or will soon undergo a stringent, independent audit by the Media Ratings Council, an independent body that oversees the process of developing standards in line with industry best practices, ensures compliance with those standards, and works with its membership to enhance compliance tools and collaborate on continually improving standards and practices. Media Ratings Council accreditation will promote transparency by confirming for advertisers that Google's integrations provide accurate information to the measurement partners' systems, align with industry standards, and can be compared across providers. For more information, please see Google Ads Blog, *New MRC accreditations and partners for Google and YouTube ads measurement*, <https://www.blog.google/products/ads/transparency-choice-ads-measurement/>.

b. Identify ad fraud on Google.

Google knows that working together with industry participants is the best way to reduce fraud—no individual business can single-handedly eliminate ad fraud across the entire web. The best way to tackle common problems across a highly interconnected web, and to move the whole web forward, is for the industry to work together, build best practices and systems, and make information sharing simple. Google does not monitor or otherwise track in its ordinary course of business third-party services advertisers might use to detect ad fraud; however, we can provide the following non-exhaustive list of third-party ad fraud detection services Google is aware of at this time:

1. Integral Ad Science
2. DoubleVerify
3. White Ops
4. Oracle/Moat
5. Picalate
6. Kochava
7. Forensiq
8. Adjust
9. AdProv
10. ClickCease
11. ClickGuard
12. ClickShield
13. Clixtell

110. Please identify the specific steps that an advertiser can take to report suspected ad fraud to Google.

Google takes ad fraud seriously and strives to protect advertisers by tackling issues threatening a safe advertising ecosystem. If an advertiser suspects that its account is being affected by invalid clicks, impressions, or other traffic, the advertiser has a series of steps it can take, including requesting an investigation. Google first directs Google Ads users to a troubleshooting guide that covers issues such as discrepancies in Google Ads click data, fluctuations in traffic, suspiciously brief visits to sites, clicks from unexpected locations/IP addresses, fake form submissions, and quick budget depletion (Google, *Troubleshooting Invalid Clicks*, <https://support.google.com/google-ads/troubleshooter/2557048?rd=1>). If the troubleshooting guide does not resolve the advertiser's concern, Google encourages its customers to contact us and provides advertisers with a "Click Quality Form" where they can initiate an investigation (Google, *Click Quality Form*, https://support.google.com/google-ads/contact/click_quality). The form asks for basic information such as contact information, circumstances surrounding the suspicious activity, affected keywords and campaigns, recent account activity, and a summary of the issue. Advertisers who have managed accounts can request an investigation of suspected invalid traffic by contacting their account team directly. If Google determines that an advertiser has been charged for invalid clicks or impressions, we would issue credits for invalid traffic as appropriate.

111. Does Google permit non-Google companies that provide competing ad servers, ad networks, or demand-side platforms to place ads on YouTube? Please explain why or why not.

It is important to note that competing ad servers, networks, and demand-side platforms have a multitude of options for buying and serving ads, including video ads that are shown on virtually every website and mobile application, including news websites and social media sites, as well as on streaming services, connected TVs, and more. YouTube is only one of a diverse array of distribution options for video ads.

For YouTube specifically, YouTube supports certified third-party ad servers. YouTube inventory is not available for purchase on third-party ad networks and demand-side platforms. YouTube has chosen to invest in its innovative (skippable) TrueView ad format and making it programmatically available on Google's Display & Video 360 in a way that optimizes the advertiser and user experience. This is a common approach to distribution, including in the sale of online ad space; several online companies sell their own ad space through internal rather than external sales channels.

112. Does Google permit non-Google companies that provide competing ad servers, ad networks, or demand-side platforms to participate in Google's ad auctions? Please explain why or why not.

Yes. Auctions within Google Ad Manager's ad exchange feature currently support hundreds of third-party demand-side platforms and third-party ad networks. This interoperability is integral to the success of Google Ad Manager.

113. In the sale of its ad services, does Google offer different terms or services to companies that compete with Google's servers, ad networks, or demand-side platforms and those that do not? If yes, please describe the relevant circumstances.

No. Google does not offer different terms or services to companies that compete with Google's servers, ad networks, or demand-side platforms than those that do not.

114. In the sale of its ad services, does Google offer differential terms of services to companies that exclusively use Google's ad services and companies that use both Google and non-Google ad services? If yes, please describe the relevant circumstances.

No. Google does not offer differential terms of service to companies that use Google's ad tech services exclusively and companies that use both Google and non-Google ad tech services.

115. What types of data does Google provide to companies participating in Google ads? If Google's provision of data varies by type of market participant, please identify and explain any differences.

Google Ads is Google's advertiser-facing interface and Google therefore understands this question to be directed to the types of data Google provides to advertisers. As a general matter, Google strives to provide advertisers with useful information so that they can optimize their return on ad spend while respecting the privacy expectations of users, data sharing regulations, and the reasonable expectations for confidentiality by other market participants.

More specifically, Google Ads provides a dashboard that allows advertisers to review predefined reports or custom-built data exports and graphics in a customizable grid. Among other things, the dashboard allows for advertisers to see scorecards showing the performance of key metrics, charts and tables related to certain visual data reports, and notes that allow collaborators to see some of the context from the dashboard. The dashboard includes a variety of metrics including some relating to performance, conversions, attribution, and more. ("Dashboard: Definition," <https://support.google.com/google-ads/answer/7069876>).

Dozens of different types of reports are also available through the Google Ads API. The "Account Performance" report, for example, includes all statistics aggregated by default at the account level. And the "Ad Performance" report includes all statistics aggregated at the ad level. Other reports are available through additional sources, such as the Google Ads user interface. For a list of the reports available through the Google Ads API, please see "Report Types," <https://developers.google.com/adwords/api/docs/appendix/reports#available-reports>

Additionally, Google Ads integrates with Analytics to provide even more sophisticated data and analysis, for example:

- How users are acquired, their behavior on the app or site after acquisition, and

their conversion patterns;

- What outcomes occurred as a result of users clicking on an ad; and
- Best times of day to target a campaign (“About the Google Ads reports,” https://support.google.com/analytics/answer/4355493?hl=en&ref_topic=1308583).

116. Please provide a complete list of Alphabet products, features, and services that collect personally identifiable data.

At Google, we design our products to collect and use data commensurate with their purpose and to keep that data no longer than necessary. These principles are reflected in all of our products. We take pride in being a leader in both transparency in the data we collect and in giving users control over their data. Google was one of the first companies to offer a centralized data portal for account information when we launched My Account (now Google Account) in 2015 (<https://account.google.com/>). Google Account provides easy-to-use tools to help our users manage privacy and security for their account. That includes our Privacy Checkup tool (<https://account.google.com/privacycheckup>) that lets our users review and change certain key privacy settings. Google users can view and delete the data stored in their account using Google Account, and they can also export their data using Google Takeout. Users can also choose whether to turn on (or off) ad personalization. Google remains committed to ensuring users have control and choice over their data and its uses.

117. Please describe how Alphabet handles a user’s data after that user has deleted its Alphabet account including but not limited to identifying whether Alphabet deletes the user’s data or retains its data in any identifiable or de-associated form.

Google cares deeply about giving users transparency, choice, and control in our products and services, and we design our products to collect and use data commensurate with their purpose and to keep that data no longer than necessary. When a user deletes data from their Google account, Google immediately starts the process of removing it from the product and our systems. We then begin a process designed to safely and completely delete the data from our storage systems. This process generally takes around two months from the time of deletion. This often

includes up to a month-long recovery period in case the data was removed unintentionally. Our services also use encrypted backup storage as another layer of protection to help recover from potential disasters. Data can remain on these systems for a period of time.

As with any deletion process, things like routine maintenance, unexpected outages, bugs, or failures in our protocols may cause delays in the processes and timeframes.

Additionally, sometimes business and legal requirements oblige us to retain certain information, for specific purposes, for an extended period of time. Reasons Google might retain some data for longer periods of time include complying with legal or regulatory requirements. More information about Google's retention policies is available at <https://policies.google.com/technologies/retention>.

118. Please indicate whether Alphabet is able to link user data anonymized by Google to a user's device or account.

The anonymization process is a critical component of Google's commitment to privacy, and Google works to ensure that its anonymization process results in data that cannot be reassociated with an individual user. As we describe in our policies, anonymization is a data processing technique that removes or modifies personally identifiable information, resulting in data that cannot be associated with any one individual. We will continue to find ways to further protect the privacy of our users' data.

119. Does Google permit Android users to download apps from the Google Play Store without using a Gmail or other Google-based account? If Google requires Android users to have a Gmail or any other Google-based account in order to download apps from the Play Store, please explain why.

Android users have many options from which to download apps aside from the Google Play Store, including downloading directly from developers, using pre-installed third-party app stores, or downloading third party app stores of their choosing to their phones. If users choose to download apps from the Google Play Store, they must have a Google account, which is necessary for, among other things, facilitating users to purchase apps (and keeping a record of what apps are purchased such that they can be downloaded again) and enabling parental controls.

120. Please provide a complete list of user data that Android collects.

Android is an open-source platform that is used by thousands of manufacturers around the world. Android devices are not necessarily associated with Google, and, depending on the manufacturer, the apps on the device, and other features, may not transmit data to Google at all. Whether an Android device transmits data to Google, and how often it transmits data, depends on a number of factors, including what apps and services exist on the device and the users' settings.

121. Please provide a complete list of user data that Android collects when an Android user has turned off all location-tracking on the Android device.

Google provides users with robust tools to control their privacy. The type of data that Google may collect from a user's Android device depends on a number of factors, including the product or service being used and an individual user's settings. On Android devices, users can turn off the device location setting. When the device location setting is turned off, Google and third-party apps no longer receive the device location based on GPS and device sensor information. Note that apps and websites connecting to the Internet may continue to use other signals like IP addresses, or other information the user provides (such as a billing address), to infer some information relevant to a user's location.

122. Does Alphabet track a user through the user's IP address, even if that user has turned off all location-tracking on the Android device?

Google strongly believes in building products that make it easy for individuals to control the use of their personal information, through device level settings or otherwise. All Google-licensed Android phones have a device location toggle that is accessible in device settings. When users turn this toggle off, the phone does not transmit device-based location information. Users can also deny access to device-based location information on an app-by-app basis via the device settings. For example, a user could deny Google Maps access to the device-based location information, but allow another app such as a taxi-hailing app to access the device's location.

Note that apps and websites connecting to the Internet may continue to use other signals like Internet Protocol (IP) address, or other information the user provides, to infer some information relevant to a user's location. The transmission of an IP address

is a standard protocol of Internet communications, and its use facilitates several user benefits. For example, we may use IP-based location estimation to prevent abuse, provide users with the correct language for search queries, or to ensure that users get results that are relevant to their general location (for example, users searching for “football” in England likely want different results than users searching for “football” in the US). We describe our use of IP addresses in our user disclosures — including, for example, in our account creation flow, in our Privacy Policy (<https://policies.google.com/privacy>), and in product when users conduct a Google search. We are always working to provide users greater choice, transparency, and control, and will continue to do so.

123. What types of Android-collected user data does Google use for advertising purposes?

Data Google collects, regardless of whether it is through the Android platform or other platforms, are described in our Privacy Policy, available at <https://policies.google.com/privacy>. Whether the users’ Google account data is used for personalized advertising purposes depends upon the users’ settings. A user can change their advertising settings at <https://adssettings.google.com/>.

124. For each of the past five years, please identify, to the nearest terabyte, the average amount of data that Google collects from Android devices in the U.S. (excluding photo and video data actively submitted by Android users).

Google is committed to giving users transparency, choice, and control in our products and services. We offer a number of resources to help users better understand the products and services we provide. These resources include plain-English and easy-to-understand instructions about how users can make meaningful privacy and security choices on Google products and more generally, online.

For example, Google’s Privacy Policy (<https://policies.google.com/privacy>) includes short, educational videos about the type of data Google collects, including location information.

We also were one of the first companies to offer users a centralized portal to see and manage their data with the launch of MyAccount in 2015 (<https://myaccount.google.com/>). Now referred to as Google Account, the portal provides easy-to-use tools for users to manage their Google Account privacy and

security. The Data and Personalization section of Google Account (<https://myaccount.google.com/data-and-personalization>) allows users to turn on or off features, like Location History, and to opt in or out of ads personalization.

In addition, Privacy Checkup (<https://myaccount.google.com/privacycheckup>) makes it easier for users to review and change their privacy settings. These tools enable users to make informed decisions about their data.

While we do not have metrics tracking the amount of data collected from Android devices in the U.S., we can tell you that the amount of data transmitted by an Android device to Google depends heavily upon the apps the user has downloaded, the users' settings, and even the phone. For example, if the user has a phone with a large amount of storage and opts into backing up their phone to Google, they could transmit a large amount of data to Google every day. Alternatively, if the user is using an Android device that is not a Google-licensed Android device, and has not installed any Google apps, the user may not transmit any information to Google.

125. Has Alphabet entered any agreements with original equipment manufacturers (OEMs) that provide Google exclusive rights to collect data from the OEM's devices? If yes, please identify the OEMs with which Google has any such agreement and describe the relevant provisions.

No. Our agreements with OEMs do not grant us exclusive rights to collect data from the devices.

126. Does Google restrict any OEMs from receiving, storing, or monetizing consumer data collected by the OEM's devices as a condition of using Android or having Google Play services on the device? If yes, please describe these restrictions and all the reasons why Google imposes them.

Google's priority is to protect users' privacy and to work to ensure they can trust our products. OEMs are subject to certain obligations and requirements that are designed to protect users. For example, apps installed by OEMs on Google certified devices with Google Play Services running on the devices are subject to our Unwanted Software Policy, available at <https://www.google.com/about/unwanted-software-policy.html>. That policy states that "[s]oftware that collects and/or transmits users' personal information must be transparent about it by providing an explanation in clear and straightforward language

that describes what information would be collected or transmitted and for what purpose” and requires that certain sensitive information like banking details, be transmitted using encryption. If OEMs also develop apps for the device that are distributed through the Play Store, they are also subject to our Play developer policies, available at <https://play.google.com/about/privacy-security-deception/user-data/>, which also restrict how user data may be collected and stored.

127. Please provide a full list of the apps that Google has suspended from the Google Play Store over the past five years and all the reasons for each suspension.

Google invests heavily to ensure that Google Play provides a safe and high-quality platform for app developers to distribute their apps and for billions of Android users to download and use the apps they enjoy. It is important to understand that the risks posed by harmful and malicious apps to users is significant, which is why Google takes significant steps to maintain the integrity of Google Play including by rejecting or suspending harmful apps.

The company’s Google Play Protect system now scans over 50 billion apps on users’ devices daily to make sure apps installed on devices are not harmful. With such protections in place, apps from Google Play are eight times less likely to harm a user’s device than Android apps from other sources. And last year alone, Google Play Protect led to the identification and removal of over 39 million potentially harmful apps from Android devices. Google continues to work diligently to improve abuse detection technologies and systems, and has significantly increased its team of product managers, engineers, policy experts, and operations leaders to fight against bad actors. Google’s investments are critical to enforcing its policies against malicious apps, which continue to evolve and become more sophisticated. Google also maintains Developer Program Policies, which, along with the Developer Distribution Agreement, are designed to ensure that users are accessing apps that are trusted, safe, and that protect user data.

In 2018, Google also introduced a series of new policies to protect users from new abuse trends, detected and removed malicious developers faster, and stopped more malicious apps from entering the Google Play Store than ever before. Google’s continued efforts to tighten policies to reduce the number of harmful apps on the Play Store, as well as its investments in automated protections and human review processes played critical roles in identification and enforcement efforts related to bad apps. In line with these efforts, the number of rejected app submissions increased by

more than 55%, and Google increased app suspensions by more than 66%. For more information, please see <https://android-developers.googleblog.com/2019/02/how-we-fought-bad-apps-and-malicious.html>.

128. Please identify which of these suspended apps, if any, competed with Google’s own app or service offerings.

Google policies apply to all apps, whether to a third party app or a Google owned app. We do not track whether apps that are suspended for a violation of our policies compete with Google’s own apps or services, as such information is not relevant to the enforcement of our policies. Competitors to Google often have many apps available in the Play Store. For example, Amazon and Microsoft each have more than 30 different apps available in the Play Store.

129. Please describe Google’s level of access to the user data provided by a user to a non-Google app.

Google is focused on protecting user data, including when provided by a user to a non-Google app. Android is designed to protect user privacy and give users control — from its enhanced User Interface (UI) to stricter permissions and restrictions on what data apps can use. Whether Google has access to data transferred to a third party app depends on a number of factors, including but not limited to whether the user enabled Google’s backup and restore service or whether the non-Google app utilizes certain Google services, like our Maps Platform.

130. Please describe all steps that Google takes when it suspects that a developer is in violation of the Google Play Store policies, including whether Google communicates the specific policy violation to the developer.

Google Play provides third-party app developers with an open and free platform to distribute apps. App developers do not pay any fees for the distribution of the apps they make available through Play. Beyond Play, developers have the ability to reach users through numerous other platforms, such as iOS, a multitude of other Android app stores, smart devices, gaming platforms, and messaging and social media platforms.

Google strives to provide a safe and robust platform where millions of developers can distribute their apps and games to billions of users in a manner that protects both the user (e.g., from unwanted, illegal and potentially harmful content) and the developer (e.g., from illegal or unfair use of their apps), in an ever-evolving and fast changing environment. A secure and high-quality app store environment increases consumer trust and, in turn, use of developers' apps and games. Google maintains Developer Program Policies, which, along with the Developer Distribution Agreement, ensure that users are accessing apps that are trusted, safe, and that protect user data.

When Google Play detects a policy violation, it will take action and notify the developer in accordance with our policies available at <https://play.google.com/intl/en-US/about/enforcement/enforcement-process/>. The notification includes a statement regarding the relevant violation and instructions on how the developer can appeal the enforcement action and/or resubmit a compliant app.

From that email, or directly from the Help Center, the developer can easily contact the Policy Support Team (Appeals) in order to challenge the enforcement decision or receive additional clarification on the infraction.

Developers also may submit an appeal form, where they can explain why they think their app does not violate a policy, why their app should not have been rejected or removed, or why their account should be reinstated. Google Play reviews the appeal request and communicates appeal decisions to the developer. If the enforcement is found to have been made in error, the app or account will be reinstated on the Google Play store.

For more information, please see the Google Play Developer Distribution Agreement available at <https://play.google.com/about/developer-distribution-agreement.html>; Developer Policy Center information available at <https://play.google.com/about/developer-content-policy/>; and additional information at Play Console Help, <https://support.google.com/googleplay/android-developer/answer/2477981?hl=en>.

131. Please identify the minimum level of information that a Google employee is required to share with an app developer when communicating that the developer's app has been suspended from the Google Play Store.

When Google Play detects a policy violation, it will take action and notify the developer, generally via email, in accordance with our policies available at <https://play.google.com/intl/en-US/about/enforcement/enforcement-process/>. The notification includes a statement regarding the relevant violation and instructions on how the developer can appeal the enforcement action and/or re-submit a compliant app.

132. If Google suspends an app without detailing the precise basis for the suspension, how does Google expect the app to remedy the violation and bring itself in compliance with Google’s policies?

Google only suspends apps from the Google Play Store if it finds the app in violation of Google Play Program Policies (<https://play.google.com/about/developer-content-policy/>), or in violation of the Developer Distribution Agreement (<https://play.google.com/about/developer-distribution-agreement.html>). We also process legal removals like copyright infringement or other legal removal requests. Egregious or multiple policy violations or repeated app rejections or removals can also result in suspension or termination. Please see our policy center summary of our enforcement process, available at <https://play.google.com/intl/en-US/about/enforcement/enforcement-process/>.

When Google Play detects a policy violation, it will take action and notify the developer, generally via email, in accordance with our policies available at <https://play.google.com/intl/en-US/about/enforcement/enforcement-process/>. From that email, or directly from the Help Center, the developer can easily contact the Policy Support Team (Appeals) in order to challenge the enforcement decision or receive additional clarification on the infraction.

Developers also may submit an appeal form, in which they can explain why they think their app does not violate a policy, why their app should not have been rejected or removed, or why their account should be reinstated.

133. Does Google give apps an opportunity to address alleged-violations of Google Play Store policies before Google suspends the app from the Google Play Store?

Google strives to provide a safe and robust platform where millions of developers can distribute their apps and games to billions of users in a manner that protects both the user (e.g., from unwanted, illegal, and potentially harmful content) and the developer (e.g., from illegal or unfair use of their apps), in an ever-evolving and fast changing environment. A secure and high-quality app store environment increases consumer trust and, in turn, use of developers' apps and games. Google maintains Developer Program Policies, which, along with the Developer Distribution Agreement, ensure that users are accessing apps that are trusted, safe, and that protect user data.

When Google Play detects a policy violation, it will take action and notify the developer, generally via email, in accordance with our policies:

<https://play.google.com/intl/en-US/about/enforcement/enforcement-process/>. The notification includes a statement regarding the relevant violation and instructions on how the developer can appeal the enforcement action and/or re-submit a compliant app. From that email, or directly from the Help Center, the developer can easily contact the Policy Support Team (Appeals) in order to challenge the enforcement decision or receive additional clarification on the infraction. Developers may submit an appeal form, in which they can explain why they think their app does not violate a policy, why their app should not have been rejected or removed, or why their account should be reinstated. Google Play reviews the appeal request and communicates appeal decisions to the developer. If the enforcement is found to have been made in error, the app or account will be reinstated on the Google Play store.

134. What appeal processes does Google have in place for app developers who believe their apps have been wrongly suspended from the Play Store?

Providing a safe and robust platform for all developers at times requires suspensions of developers for violating our policies or for legal reasons, such as copyright infringement. App developers who believe their apps may have been wrongly suspended may file appeals. Developers may submit an appeal form, in which they can explain why they think their app does not violate a policy, why their app should not have been rejected or removed, or why their account should be reinstated. Google Play reviews the appeal request and communicates appeal decisions to the developer. If the enforcement is found to have been made in error, the app or account will be reinstated on the Google Play store.

135. Has Google ever represented to app developers that their AdMob account manager can help them resolve any issues developers are having with Play Store suspensions? If yes, please describe the relevant circumstances.

Google adheres to a clear and transparent mechanism for the suspension of apps in its Play Store and appeals regarding suspensions as described in prior responses above. That mechanism is not controlled by and does not provide for any specific role for an individual AdMob account manager.

136. Does the Google Play Store differentiate its treatment of non-Google apps based on whether an app has chosen to integrate with adjacent Google product offerings? If yes, please describe the relevant circumstances.

No. Google's algorithms for app discovery within its Play Store do not take into account whether an app has chosen to integrate with adjacent Google product offerings. Google Play Store facilitates the distribution of a wide variety of over one million apps, including apps that compete with Google's apps. Google uses an algorithm to determine placement of apps within search and discovery results to ensure that users are directed to safe, high-quality, relevant, and useful apps. Google's algorithms consider app quality and user engagement by taking into account high retention rates, low crash rates, low uninstalls, and many other factors.

137. How does Google determine which categories of apps are required to use Google's in-app payment or purchasing services?

Our full policies for monetization strategies can be found on our developer support page at "Developer Policy Center - Monetization and Ads," available at <https://play.google.com/about/monetization-ads/payments/>. Developers offering products within a game downloaded on Google Play, or providing access to game content, must use Google Play In-App Billing as the method of payment. Developers offering products within another category of app downloaded on Google Play must use In-App Billing unless: 1) payment is solely for physical products, or 2) payment is for digital content that may be consumed outside of the app itself (e.g., songs that can be played on other music players). The second exception relates to instances where the user is able to purchase and own downloadable, portable file formats which can then be played on other players.

138. Over the last five years, has Google changed its method for determining which apps must use Google’s in-app payment or purchasing services? If yes, please describe each of these changes and all the reasons for each change.

No. Google’s policy has remained consistent with regard to this issue over the past five years.

139. Please identify how much it costs Google to produce a Google Home device.

Google tracks and reports costs on a company-wide basis. Those figures are available in our Forms 10-K and 10-Q. Recent filings are available at <https://abc.xyz/investor/>.

140. Please identify what types of data Google collects through its Google Home products and explain how each type of data is used.

Google cares deeply about giving users transparency, choice and control over their data in our products and services. Google Home and Google Home Mini are two hardware devices that Google designed to further enable users to interact with the Google Assistant in their homes. The data a user shares with Google via Assistant on the Google Home or Google Home Mini is highly dependent upon the user’s settings and the types of services and devices that the user has linked to their account. Users have control over the data they share with Assistant, as described at <https://support.google.com/assistant/answer/7126196>. Users can also go to Google Account to change their settings and view and delete their Assistant activity — every day, nearly 20 million people visit Google Account.

In addition, Google has published FAQs on Privacy for Google Nest, which are available at https://support.google.com/googlenest/answer/9415830?hl=en&ref_topic=7173611, to describe and provide more details about how Google collects and uses user data for its Nest products and services, including its Google Home devices.

141. Does Google allow developers to make a skill available through and/or compatible with Google Home without sharing user skill data with Google? Please explain why or why not.

Google allows third-party developers to create Actions for the Google Assistant through Actions on Google (AOG). The AOG ecosystem offers a rich source of content, connecting users to the apps and services they use as part of daily life. The Assistant has also been built with developers in mind, so that when a user talks to the Google Assistant, the user can access content and services beyond just Google's products, like Search. Because Assistant is part of Google, interactions that the user has through Assistant are saved in the user's Google account, subject to the user's settings. A user has control over what data they share with Google or save in their Google Account.

142. Please identify which categories or teams of Alphabet employees have access to data or information that Google collects through Google Home products, specify the types of data to which each has access, and describe where in Alphabet's organization chart the teams or employees are located.

Google is a leader in security, and cares deeply about protecting users data. We have strict policies governing and limiting employee access to users' information. Our policies require that access to user data is only granted for authorized, valid Google business purposes. Our policies further provide that authorizations are granted only for a specific purpose and a specific type of access to meet the needs of the authorization request. Google employee access to user data can be logged and monitored, and Google's security team actively monitors access patterns and investigates unusual events.

Google reinforces these access limitation policies with its employees, who undergo security and privacy training at the start of their employment and annually thereafter. Additional, specialized training and policies apply to employees who have access to user data. Any employee with access to user data is subject to strict contractual confidentiality obligations. Violations of these policies and other privacy policies may result in disciplinary action, including termination of employment.

143. Google Home can offer local search solutions. How does Google determine which local service is returned to the consumer?

Google's results on Home are provided by Google based on its own search indices. For local services, providers that have been pre-screened and verified may be identified for users in response to relevant voice search queries.

144. Has Google entered any marketing deals or arrangements with merchants to guarantee those merchants referrals through Google Home? If yes, identify and describe these deals or arrangements.

No. Google does not guarantee that a certain merchant will be “referred,” that is, advertised during Assistant responses on Google Home, by virtue of Google’s partnership with that merchant.

145. Has Google ever demanded, as a condition for entering into a business partnership with another company, access to any data collected by that company, including the company’s own proprietary data? If yes, please describe the relevant circumstances.

It is not uncommon for companies to include, as part of a contract, access to another company’s data, and Google is no exception. For example, data security terms often require that one company provide logs, audits, or other proprietary or confidential information relevant to analyzing the impact of a security incident on the other company. In other cases, the sharing of confidential or proprietary data is necessary to engage in a joint venture or other projects that require the integration of products. Google has likely entered into these types of contracts over the years and to the extent that such terms exist for either or both parties, they are the product of good faith negotiations by sophisticated parties.

146. Has Google ever used information gathered as a result of a business partnership with another company to guide its product strategy? If yes, has Google ever used this information to introduce Google products that directly compete with the business partner’s product?

Google constantly seeks to improve and expand its product offerings based on user feedback, technological developments, and input from other companies, including companies with which it partners, among other sources of information. For example, Google’s partners voluntarily provide input to help improve future releases of the Android open source operating system, from which all Android users may benefit. Google’s partners also provide input to improve the Chromium open source browser, which underlies not only Google Chrome, but also a large number of competing browsers.

Google also voluntarily provides its own technology to rivals to support their users. For example, Google offers for free to rival browsers our Safe Browsing technology, which examines billions of websites per day looking for unsafe sites. Every day, we discover thousands of new unsafe sites, many of which are legitimate websites that have been compromised. When we detect unsafe sites, we show warnings on Google Search and in web browsers. Apple and Mozilla use this Safe Browsing information for free to protect millions of Safari and Firefox users.

We deeply value our relationships with our partners and, as we do throughout our business, Google complies with any contractual or other legal requirements regarding the use of intellectual property, trade secrets, or other confidential business information that business partners provide to Google.

147. Has Google ever threatened to remove a company from Google Search due to a business dispute with that company in one of Google's other areas of business?

No. Search results are based on our algorithms and designed to provide our users the most useful information to their queries. Google does not remove companies from Search as part of business disputes with such companies in other areas of Google's business.

148. Does Google include or has it ever included in any contract with business partners a waiver of some or all intellectual property rights whereby a business partner agrees not to bring some or all intellectual property infringement claims with regard to a Google product or service? If yes, please describe the relevant circumstances.

It is not uncommon for companies to grant each other licenses in contracts that would result in essentially a waiver of some or all intellectual property claims. In addition, companies also enter into settlement agreements regarding claims related to intellectual property infringement claims. Google regularly engages in licensing exchanges with other companies and may have entered into settlement agreements as well. To the extent that such terms exist for either or both parties, they are the product of good faith negotiations by sophisticated parties.

149. Does Google include or has it ever included in any contract with business partners a termination clause maintaining the right to end a business partnership

if the business partner asserts any intellectual property infringement claims against Google? If yes, please describe the relevant circumstances.

It is not uncommon for companies to include a wide variety of termination clauses applicable to both parties to a contract. Google may have entered into these types of contracts over the years and to the extent that such terms exist for either or both parties, they are the product of good faith negotiations by sophisticated parties.

150. Does Google include or has it ever included, in any contract with business partners a waiver of some or all antitrust claims whereby a business partner agrees not to bring some or all antitrust claims with regards to Google's conduct? If yes, please describe the relevant circumstances.

It is not uncommon for companies to include waivers of claims in contracts or agreements to settle pending or threatened litigation. Google may have entered into these types of contracts over the years and to the extent that such terms exist for either or both parties, they are the product of good faith negotiations by sophisticated parties.

151. Please describe how Google's algorithm determines the tab in which a sender's email is slotted in Gmail.

Our goal for Gmail is to give users control over their email, and to make their email useful, productive, and functional. Gmail users have always been able to set up filters in Gmail to automatically move emails from their inbox into other folders, based on factors such as the sender or the subject of the email, which is a common feature provided by many email providers. In 2013, Google introduced tabs that allowed users to choose to sort their email by various topics, such as Promotions, Social, and Updates. Users can choose any or none of these categories, or they can create their own.

Whether email is directed into one of these tabs is dependent upon a number of factors, including the users' selection of the tabs and the users' own settings. Our algorithms learn from aggregated user behavior to determine to which tab an email should be directed; for example, if users are generally moving a type of email to the Promotions tab, the system reflects aggregate user preferences and directs messages from that sender to the Promotions tab. Similarly, if users are moving their email to the Primary tab, our algorithm will learn from that action as well.

Because our users have many different options in terms of email providers, Google has consistently developed other new innovative features in Gmail, such as the recently launched Smart Compose, Confidential Mode, and the ability to schedule when emails are sent.

152. Please identify the primary factors that impact a mass sender’s e-mail open rates, where a “mass-sender” is defined as an entity that regularly sends e-mails to more than 50,000 users.

Whether a mass-sender’s email is regularly opened by recipients depends on a number of factors, including whether the recipients are appropriately targeted for the email, the topic and timeliness of the email, and subjective factors, including whether recipients have found such emails helpful in the past. We would defer to experts regarding email marketing trade practices and top factors that increase open rates. We do, however, provide tools to bulk email senders to help them ensure that their email is appropriately delivered to Gmail users and not marked as spam, available at https://support.google.com/mail/topic/7279058?hl=en&ref_topic=3394151, including instructions on how to provide recipients an option to unsubscribe from the emails.

153. How do open rates vary based on the type of Gmail tab that is assigned to an e-mail? Please identify the average open rates for e-mails in 2018, broken down by the tab that Google assigned to the e-mail.

Google introduced tabs back in 2013 to provide users with an efficient way to sort their email by various topics, such as Promotions, Social, and Updates. Google has not examined open rates based on the tab that is assigned to a given email. In order to properly assess whether an email is more likely to be opened in one tab versus when it is routed to another tab, we would need to conduct a test to determine if delivering the same message to the same user is more likely to be opened than when the same email is delivered to the same user via another tab. We have not conducted such tests and therefore do not have these metrics.

154. If a sender’s e-mails are consistently delivered to the “Primary” inbox tab, but—pursuant to an algorithmic change—are later shifted to the “Promotions” tab, how would this change affect the rate at which the sender’s e-mails are opened?

Because we strive to give users control over their email, and to make their email useful, productive, and functional, our algorithms are highly dependent upon users' actions. So, for example, if an email was redirected to the Promotions tab, it may generally be because users in aggregate were redirecting the email to the Promotions Tab. As discussed above, we have not conducted tests that would allow us to determine whether a particular email's open rate was affected by the tab in which it appears.

155. If the Gmail algorithm is changed such that a given sender's e-mails will be delivered into a new tab, does Google inform the sender of this change before or after implementing it? Please describe any processes in place to alert e-mail senders of this type of change.

Google designs Gmail to respond to the interests of our users. If users want an email to be directed to a different tab, like their Primary inbox, they can choose to direct the email to be delivered to that inbox by dragging the email to the Primary Inbox. Gmail will then ask if they wish to deliver all future emails from that sender to the same Inbox. Because where an email is delivered is highly dependent upon users' actions, Google is not in a position to provide notice to marketers about the change.

156. When and why did Google implement the e-mail tab structure?

We announced our changes to Gmail in 2013 in a blog post, located at <https://www.blog.google/products/gmail/a-new-inbox-that-puts-you-back-in/>. As described in that blog, we designed this to help users take control of their email and make their use of Gmail more productive. Because our users have many different options in terms of email providers, Google consistently develops new innovative features in Gmail such as these inbox tabs.

157. Please describe how Google's ad revenues on a per-email basis compare one year before and one year after the tab structure was implemented.

Gmail-related revenue from advertising is accounted for in Google properties revenues, which also incorporates advertising revenues from Google search properties, and other Google owned and operated properties, such as Google Maps, Google Play, and YouTube. Google does not, however, track revenue on a per-email basis in the ordinary course of its business.

For additional information regarding Google properties revenues, please see our Forms 10-K. Recent filings are available at <https://abc.xyz/investor/>.

158. How does Google advise organizations who seek to change the tab in which their emails are slotted?

Google aims to provide our users a broad range of information and choices to foster and continuously improve a diverse Internet ecosystem. Email is an important part of that ecosystem. Google provide tools to bulk email senders to help them ensure that their email is appropriately delivered and not marked as spam. More information about these tools are available at https://support.google.com/mail/topic/7279058?hl=en&ref_topic=3394151. These tools, however, do not change to which tab an email may be delivered. Where an email is delivered is largely dependent upon individual users' direction and aggregated user actions.

159. Has Google ever recommended that organizations seeking to change their tab designation purchase ads in order to achieve higher open rates? If yes, please describe the relevant circumstances.

No. An organization cannot change the tab designation of their emails by purchasing ads. Google offers Gmail Ads, but these ads still appear in the Promotions or Social tabs of Gmail. Gmail Ads are only shown if the user has opted to use those tabs, and those Gmail Ads are not personalized based on the user's Gmail content.

160. Please identify what types of data Google collects through Google Cloud and explain how each type of data is used.

Google Cloud Platform (GCP) is an enterprise cloud offering consisting of storage, compute, and data management services. When enterprise customers submit their data to GCP, Google stores, manages, and protects the customer data in accordance with the contract terms entered into with its customers, available at <https://cloud.google.com/terms/>. Google considers itself a service provider with regard to this customer data, and would not consider itself to have "collected" such data.

Google logs information about an enterprise customer's interactions with the GCP admin console, APIs, and command line tool. This activity data may include a unique

identifier associated with the enterprise customer or its administrator, date and time of the activity, IP address, and information about a customer's or administrator's actions, for example, when a user logged into the GCP console.

161. Please identify all types of information Google tracks on a Google Cloud user or customer that are not made available to the Google Cloud user or customer.

Google enables its GCP customers to access, export, and delete their own customer data in GCP. For many of the GCP services, we also provide the customer with access to logs containing activity data (described above). Information about the audit logs related to a customer's use of the GCP services, which customers can access, is available at <https://cloud.google.com/logging/docs/audit/>. In addition, administrators can access certain activity data related to their interactions in the GCP console. To the extent that users cannot access personally identifiable information via Google services, they may submit a request to Google or the other customer, as appropriate. There may be other categories of data which enterprise customers or users cannot access and which we do not typically make available, such as the anonymized data described in response to Question No. 163.

162. Has Google ever used a Google Cloud customer's usage patterns or any other Google Cloud data to inform Google's investment decisions? If yes, please describe the relevant circumstances.

As described in response to Question No. 163 below, Google uses aggregated activity data to make decisions about managing its resources and infrastructure, but we do not make investment decisions based on a GCP customer's activity data or their customer data.

163. Has Google ever used aggregate forms of Google Cloud usage data to inform Google's investment decisions? If yes, please describe the relevant circumstances.

Google uses aggregated activity data for business planning and to make decisions about managing its resources and infrastructure. For example, Google might use aggregated data about storage and compute resource usage to plan for capacity in our data centers or aggregated data about service utilization to prioritize technical support. Google does not use this data to inform decisions about unrelated investments in other companies or sectors.

164. Has Google ever used a Google Cloud customer's usage patterns or any other Google Cloud data growth to inform Google's product strategy? If yes, please describe the relevant circumstances.

As described below in response to Question No. 165, Google may use aggregated GCP activity data to improve, promote or develop GCP services, but it does not make product strategy decisions based on a GCP customer's activity data. Google processes customer data only in accordance with the GCP Terms and processes a GCP customer's activity data to provide and promote the GCP services, to enforce Google's Acceptable Use Policy (<https://cloud.google.com/terms/aup>), and for legal reasons.

165. Has Google ever used aggregate forms of Google Cloud usage data to inform Google's product strategy? If yes, please describe the relevant circumstances.

Google may use aggregated GCP activity data to improve, promote, or develop GCP services. For example, Google may review statistical data about file types stored in GCP to make a decision on what file types GCP services should support.

166. Google has publicly announced that it intends to implement DNS over HTTPS (DoH) as the default setting in its Chrome browser. Please explain the effects that implementing DoH will have on domain name traffic.

The privacy and security of users is Google's utmost concern. Traditional DNS services introduce privacy concerns because the DNS system, which determines the server destination of a user query, has vulnerabilities that expose a user to bad actors. For example, the connection is not private and requests can be redirected — both issues over which privacy experts have expressed concern. DNS over HTTPS (DoH) encrypts DNS requests, preventing third parties from seeing sites users access, thus making users' activity more private and secure. Google is currently conducting a limited experiment, and has not announced any general change to Chrome with respect to DNS lookup requests. The announced experiment does not switch the DNS provider for any Chrome user; instead, Chrome will check if the user's current DNS provider is among a list of DoH-compatible providers that have chosen to participate in the experiment, and if so upgrade to the equivalent DoH service from the same provider. The user's provider for DNS/DoH resolution will remain the same. We are

conducting this experiment to test potential features that will improve user security and privacy. For more information, please see <https://blog.chromium.org/2019/10/addressing-some-misconceptions-about.html>.

167. Does Google plan to implement DoH as the default option in the Android operating system? If yes, what, effect will implementing DoH by default in the Android operating system have on Google’s ability to collect data on Android customers’ web browsing habits and app usage?

No, Google currently does not have such a plan.

168. Does Google have any plans to use data collected or processed through DoH for commercial purposes?

a. If yes, please provide a description of each plan, including the expected timing and benefits.

b. If no, please indicate whether Google has considered any such plans and why it rejected them.

The data collected and processed through DoH is controlled by the DNS provider, not the browser (e.g., Chrome) or operating system (e.g., Android). As explained above, the announced experiment in Chrome does not switch the DNS provider for any user.

For the majority of traffic, the DNS provider is the user’s Internet service provider (ISP), not Google. Google expects that ISPs will implement DoH, and our plan is to partner with ISPs to support the ISPs’ deployment of DoH services for their users.

Some users may choose a different DNS provider than their ISP. One such option is a DoH service that Google offers to the public free-of-charge. This service, Google Public DNS, is opt-in for Chrome users. Google retains two types of data from Google Public DNS queries, temporary logs and permanent logs:

- Temporary logs contain some personal information and are deleted after 48 hours. Temporary log data is used only for security and stability purposes. This data is used to identify and mitigate security threats and/or to fix, maintain, or improve Google DNS services. Temporary log data is never used for targeted advertising or marketing, and Google does not correlate or associate

personally-identifiable information from Google Public DNS logs with any personally-identifiable information from other Google services.

- Permanent log data, which does not contain any personal information, may be used for a variety of purposes, including development of new products and services. We do not share permanent logs outside of Alphabet Inc. and its subsidiaries.

Details regarding our commitment to user security and privacy in providing the Google Public DNS service are available at

<https://developers.google.com/speed/public-dns/faq#info> and <https://developers.google.com/speed/public-dns/privacy>.

169. Will Google’s plan to implement DoH prevent non-Google firms from either accessing data they previously had access to or policing harmful network activity? If yes, please identify all the types of data non-Google firms will no longer be able to access.

Google’s plans involve only a limited DOH experiment in Chrome related to upgrading from a given DNS provider’s non-DoH service to the same DNS provider’s DoH service. As a result, DNS providers, including ISPs, will still have the ability to view the traffic that users send and receive, and to use that information to engage in IP blocking of malicious and/or illegal sites.

170. In partnership with Mozilla, Cloudflare has agreed to collect a minimal amount of information about DNS requests and has agreed to delete that information within twenty-four hours of Cloudflare’s receipt. It also has made a commitment not to “retain or sell or transfer to any third party (except as may be required by law) any personal information, IP addresses or other user identifiers from the DNS queries.” Has Google agreed to these commitments?

a. If yes, please provide a copy of these commitments.

b. If no, please explain why not.

c. If no, please indicate whether Google has any plans to monetize information collected or processed through DoH and provide a description of any such plans, including the expected timing and benefits.

The data collected and processed through DoH is controlled by the DNS provider, not the browser (e.g., Chrome) or operating system (e.g., Android). As explained above, the announced experiment in Chrome does not switch the DNS provider for any user.

For the majority of traffic, the DNS provider is the user's ISP, not Google. Google expects that ISPs will implement DoH, and our plan is to partner with ISPs to support the ISPs' deployment of DoH services for their users.

Some users may choose a different DNS provider than their ISP. One such option is a DoH service that Google offers to the public free-of-charge. This service, Google Public DNS, is strictly opt-in for Chrome users. Details regarding our commitment to user security and privacy in providing the Google Public DNS service are available at <https://developers.google.com/speed/public-dns/faq#info> and <https://developers.google.com/speed/public-dns/privacy>.

171. Please identify which categories or teams of Alphabet employees have access to data or information that Google collects through Google Cloud, specify the types of data and information to which each has access, and describe where in Alphabet's organization chart the teams or employees are located.

We have a long-standing and unwavering commitment to security, and take seriously the security of our systems and data. In addition to other controls, we limit and monitor the activities of employees who have been granted administrative access to company resources. Google follows a formal process to grant and revoke employee access to Google resources. Approvals are managed by workflow tools and logged, and an employee's access authorization is enforced at all relevant layers of our systems. Dedicated security teams actively monitor access patterns and investigate unusual events. As part of our commitment to transparency and security, we provide GCP customers the ability to review and audit logs regarding our own access to their data. For more information about this logging, please see <https://cloud.google.com/logging/docs/audit/access-transparency-overview>.

172. Please identify the percentage of Google users that are subject to a mandatory arbitration clause and/or class action waiver in their agreement with Google, describe the relevant provisions, and identify any types or categories of

Google user contracts that do not contain a mandatory arbitration clause and/or class action waiver.

Our general terms of service for Google products like Gmail, Search, and Maps do not include either an arbitration clause or class action waiver. They are available at <https://policies.google.com/terms?hl=en-US>.

173. Since 2014, how many Google users have initiated arbitration proceedings to adjudicate a legal claim against Google, in total and broken down by type of legal claim?

Our general terms of service do not contain mandatory arbitration clauses. Some users may choose to initiate arbitration proceedings for a variety of reasons, including to avoid the burdens of civil litigation. We do not maintain information regarding arbitration proceedings initiated by Google users such that it could be easily queried to provide a more detailed response to this question.

174. Please identify the percentage of Google employees that are subject to a mandatory arbitration clause and/or class action waiver in their agreement with Google, describe the relevant provisions, and identify any types or categories of Google employee contracts that do not contain a mandatory arbitration clause and/or class action waiver.

Google does not require employees to agree to mandatory arbitration or class action waivers.

175. Since 2014, how many current or former Google employees have initiated arbitration proceedings to adjudicate a legal claim against Google, in total and broken down by type of legal claim?

As noted in response to Question No. 174, Google does not currently require employees to agree to mandatory arbitration or class action waivers. From January 1, 2014 to September 1, 2019, current and former Google employees have initiated 11 arbitration proceedings against Google in the United States.

176. Please identify the percentage of Google contractors that are subject to a mandatory arbitration clause and/or class action waiver in their agreement with Google, describe the relevant provisions, and identify any types or categories of

Google contractor contracts that do not contain a mandatory arbitration clause and/or class action waiver.

Google does not require members of its extended workforce, who are employed by other companies, to agree to mandatory arbitration or class action waivers.

177. Since 2014, how many current or former Google contractors have initiated arbitration proceedings to adjudicate a legal claim against Google, in total and broken down by type of legal claim?

As noted in response to Question No. 176, Google does not currently require members of its extended workforce, who are employed by other companies, to agree to mandatory arbitration or class action waivers. From January 2, 2014 through September 1, 2019, members of Google's extended workforce have initiated three arbitration proceedings against Google in the United States.

178. Please identify the percentage of Google business partners that are subject to a mandatory arbitration clause and/or class action waiver in their agreement with Google, describe the relevant provisions, and identify any types or categories of Google's contracts with business partners that do not contain a mandatory arbitration clause and/or class action waiver.

Google has used arbitration agreements in commercial contracts. For example, we have an arbitration agreement in our U.S. terms of service for Google Ads. Those provisions are available at <https://payments.google.com/u/0/paymentsinfofinder>. Our records, however, are not stored in a way such that we could produce a percentage of business partners that are subject to these types of agreements.

179. Since 2014, how many current or former Google business partners have initiated arbitration proceedings to adjudicate a legal claim against Google, in total and broken down by type of legal claim?

Businesses frequently choose arbitration to avoid the burdens of civil litigation. We do not maintain information regarding arbitration proceedings initiated by business partners such that it could be easily queried to provide a more detailed response to this question.

180. Please identify the percentage of Google employees and contractors that are subject to a non-compete clause in their agreement with Google, describe the relevant provisions, and identify any types or categories of Google employees and contractors that are not subject to a non-compete clause.

We do not have any post-termination non-compete agreements with Google employees in the United States. As is standard in the industry, there are limited instances where some current employees may have signed non-compete agreements in connection with the sale of their business to Google via a merger or acquisition agreement. Such non-compete agreements are not employment related. Instead, they are related to the employee's prior ownership of stock in the target entity; and, as a former owner of the target entity, he or she agrees not to compete with the business he or she sold to Google for a certain period of time following the closing of the sale of the business.

181. Since 2014, how many former Google employees and contractors has Google sued or initiated arbitration proceedings against in connection with an alleged breach of a non-compete clause? Please break down this number by type of legal relationship (e.g., employee or contractor) and describe the relevant circumstances that gave rise to each suit or arbitration.

As discussed above, we do not use non-compete agreements for our employees or contractors.

Written Questions for the Record from the Honorable Mary Gay Scanlon

1. CreativeFuture—a coalition representing 555 organizations and more than 250,000 people in the creative rights community—has raised concerns about the effect of copyright theft on Facebook and Google on the competitive process.

As Ruth Vitale, the CEO of CreativeFuture, notes in a submission for the record, “unfair methods of competition often facilitated and sometimes practiced by the massive internet platform providers results in less creative content than otherwise would exist, fewer new voices, and harm to legitimate sources of distribution.”

- **What is your response to the concern of people in the creative rights community that YouTube has little economic incentive to combat widespread copyright theft, and that this has distorted the market for online streaming of movies and television?**

Digital tools and online distribution have created new opportunities and lower barriers to entry, transforming every kind of creative endeavor, both amateur and professional. As reflected in a 2019 report from the Computer & Communications Industry Association (available at <https://skyrising.com>), the result is that more photography, music, video, software, and books are being created by more people than ever before. By creating new and growing revenue streams and allowing creators to reach global audiences, digital services have become a central and important part of the creative economy. YouTube is proud to be a part of this growth opportunity for content producers. Today, for example, channels from over 90 different countries earn revenue from their videos on YouTube. These YouTube creators are redefining the face of media, building businesses on and off the platform, contributing to local and global economies, and creating new jobs.

At Google, we build platforms where people can legitimately purchase, consume, and discover entertainment and culture and pioneer innovative approaches to monetizing online media. And our partners include independent creators, major studios, record labels, and publishers. As a result, we not only have a legal obligation, but also a business incentive to fight piracy and take the ongoing challenge seriously.

We invest significantly in the technology, tools, and resources that prevent copyright infringement on our platforms. We also work with others across the industry on efforts to combat piracy. These efforts are having an effect: around the world, online piracy has been decreasing, and spending on legitimate content is rising. We detail all of these efforts in our report, *How Google Fights Piracy*, which is available at https://www.blog.google/documents/27/How_Google_Fights_Piracy_2018.pdf.

On YouTube, for example, we've invested over \$100 million in building YouTube's industry-leading Content ID system, which allows rights holders a way to claim content at scale by finding matches to content they submit to us and giving them an automated way to identify, block, and even make money from uploads of their content. We have paid out over \$3 billion to creators who use Content ID. YouTube also recently launched its Copyright Match Tool, which uses the power of the Content ID matching system to find near identical re-uploads of creator videos on YouTube. Instead of uploading a reference file to YouTube, creators who are the first to upload a video to YouTube, now including private video uploads, are shown subsequent uploads that match their videos. Creators can then review the matching videos and file takedowns for any they wish to remove. Finally, copyright owners and their representatives can submit takedown notices using an easy-to-use webform or our program for high volume submitters. In addition, YouTube's copyright center has extensive information aimed at educating people about copyright.

2. CreativeFuture also reports that Google and Facebook's failure to adequately address piracy and infringement is posing an existential threat to the independent film and TV industry. It seems that Google and Facebook's market power in online distribution means they face no real ramifications for this failure. YouTube receives 900 million takedown notices over a year, many of times for the same content.

a. What processes does Google have in place to adequately protect content producers?

In connecting users to authorized sources for films and television programming, Google faces a competitive landscape where many other providers also distribute film and television content. Indeed, there have never been more authorized sources of film and television content, particularly in the online streaming space, with offerings from Amazon, Netflix, Hulu, SlingTV, Apple+, CBS All Access, and Sony Playstation Vue,

among others, in addition to traditional cable and satellite offerings. Content creators like Disney are also creating their own online distribution channels.

Google is an industry leader in copyright protection and provides copyright and content management tools that give rights holders control of their content on YouTube. These tools are effective. For example, over 98% of copyright issues on YouTube are handled through Content ID, rather than the notice-and-takedown process. And 90% of the time rights holders choose to monetize these claims. For the remaining 2% of copyright issues, we have robust tools for notice and takedown including an easy-to-use webform, the Content Verification Program, and the Copyright Match Tool. For Search, we currently process approximately 2 million URLs each day, and a majority of these URLs are not even in our index at the time of submission.

3. Dozens of websites have reported that Google has copied their content without attribution to build out Google’s own competing products and to keep users within Google’s ecosystem. The Federal Trade Commission investigated this conduct in 2012 and concluded that the “natural and probable effect of Google’s conduct is to diminish the incentives of vertical websites to invest in, and to develop, new and innovative content.”

The Commission’s staff also recommended that the FTC bring an antitrust lawsuit against Google for this conduct. Although Google agreed to voluntary changes to settle the Commission’s investigation of this conduct, it appears that Google still engages in scraping for its information box, the panel that Google uses to highlight its own content.

- **Mr. Cohen, does it remain Google policy to systematically copy the content of third-parties for its information boxes?**

Google works to surface useful information for users in response to their Search queries. Like other search engines, our results not only include links but sometimes direct answers, such as the current weather or the age of a celebrity. Some of these results are Knowledge Panels, which are a collection of different kinds of information from different kinds of sources on the internet. Information in Knowledge Panels, or in other direct-answer results, are often licensed content from third party websites. For example, we license information from Weather.com for our Knowledge Panels about the weather, and credit Weather.com for the information. In some cases, we allow

businesses and individuals to post directly to their Knowledge Panels, which allows them control over the information display.

4. Recently, the founders of Genius—a website dedicated to producing accurate song lyrics—publicly shared that for two years Google has been displaying, or “scraping”, lyrics copied from Genius in its information box, which takes up 40% of a desktop results page and 80% of a mobile results page. As they noted, this appropriation of third-party content makes it unlikely that users will ever leave Google in favor of the site that actually produces the content.

In fact, the founders of Genius approached Google about copying their product, but Google did nothing to address the issue for over two years. It was only after Genius shared its account with the Wall Street Journal that Google sprung into action and fixed the problem.

- **Mr. Cohen, in response to this report, Google stated that it does not scrape or crawl third-party websites for lyrics. But what process does Google have in place for content producers to report widespread copying of their content?**
- **Is it Google’s policy to only address the concerns of content producers when they go public?**

Google understands the importance of protecting copyright, and we respond to valid DMCA requests from the copyright owner. In the case of Genius, we did not receive a DMCA request related to its concerns. Google licenses the lyrics we display in search directly from the rights holders and their official licensors. We recently wrote a blog post about how we show users lyrics, which is available at <https://www.blog.google/products/search/how-we-help-you-find-lyrics-google-search/>.

5. In addition to the lack of consequences for the market power Google and YouTube have over the film and television industry, their platforms also compete with these industries – specifically YouTube. Google produced a report titled *How Google Fights Piracy* that discusses the efforts you all have made to de-rank pirated content on your site, but I’m concerned that these efforts may not be uniform across the board.

When Googling original shows produced by YouTube Premium for pirated versions, nothing comes up. However, when you search for pirated versions of shows like *Game of Thrones*, or even far less popular shows like Netflix's *Russian Doll* or HBO's *Barry*, a litany of torrented versions comes up.

- **This discrepancy in the availability of pirated content suggests that Google is offering preferential treatment for their content to the detriment of other content producers – a practice which at best could be an oversight but at worst could be an attempt to dilute web traffic for competing content providers. Can you explain this discrepancy?**
- **Can you provide details on how you decide which pirated content to take down and when?**
- **Can you provide information on how pirated content is taken down?**

Google does not offer preferential treatment in Search results to our own content and takes the protection of copyrighted works seriously regardless of the identity of the content producer. To help copyright owners submit copyright removal notices for Search, Google has developed a streamlined submission process built around an online webform that copyright owners can use to submit removal notices. Since 2011, more than 135,000 different submitters have requested we remove web pages from search results for copyright violation. Since launching this submission tool for copyright owners and their agents, we have removed over 3 billion URLs that infringed copyright from Search.

In addition to our content removal webform, Google provides a tool for copyright owners with a proven track record of submitting accurate notices and a consistent need to submit thousands of web pages each day. Google created the Trusted Copyright Removal Program (TCRP) for Search to further streamline the submission process, allowing copyright owners or their enforcement agents to submit large volumes of web pages on a consistent basis. As of 2017, there are more than 178 TCRP partners, who together submit the vast majority of notices.

Google also factors in the number of valid copyright removal notices we receive for any given site as one signal among the hundreds that we take into account when ranking search results. Consequently, sites for which Google has received a large number of valid removal notices appear much lower in search results. We have found

that demoted sites lost an average of 89% of their traffic from Google Search. In addition, this may have contributed to the 9% decrease in the number of URLs listed in takedown notices from 2016 to 2017. We will continue to invest substantial resources and engineering efforts into improving our procedures for receiving and processing copyright removal notices.

In addition, when people search with the intention to watch or listen to media, we may show new cards for those queries directing them to legitimate sources. These cards may also appear for queries to “stream” or “download” the movie, and also appear for similar music-related queries. Our partners for these “Watch Actions” include, for example, HBO, Netflix, Amazon, Apple, and Hulu.

In the specific case of YouTube Originals, except for some of the most recently launched productions, YouTube is not the copyright owner of the content. Instead, our production partners retained copyright, and YouTube is merely a licensee for a period of years. Enforcement against unauthorized versions of the content is the responsibility of those production partners, who have used a variety of standard means, without being given any special treatment by Google or YouTube. For some of these original productions, where the partner did not already have an established anti-piracy strategy, YouTube ensured that anti-piracy vendors were engaged to request removals of unauthorized copies from the Google Search index through the standard means available to other rightholders, as well as to use YouTube’s tools, again through standard means available to other rightholders. In some of the most recently launched productions where Google is the copyright owner, we have chosen to make this content freely available on YouTube, on an ad-supported basis. We believe that increasing access to authorized sources for this content reduces the incentive to engage in piracy.