**GOOGLE'S SUBMISSION IN RESPONSE TO
SUBCOMMITTEE QUESTIONS FOR THE RECORD
FOLLOWING JULY 29, 2020 HEARING**

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

1. According to data from Jumpshot, more than half of desktop searches on Google keep users on Google's properties, rather than resulting in clicks to the rest of the web.[1] Do you agree that more than half of desktop searches on Google now result in users staying on Google's properties rather than clicking to a non-Google site? If not, please identify data supporting your view.

2. According to data from Jumpshot, more than 70% of mobile searches on Google keep users on Google's properties, rather than resulting in clicks to the rest of the web.[2] Do you agree that more than 70% of mobile searches on Google now result in users staying on Google's properties rather than clicking to a non-Google site? If not, please identify data supporting your view.

Because the answers to these questions are related, we have grouped together our response to Question Nos. 1 and 2.

Google's core business model depends on providing users with the information they are seeking. The success of Google Search depends on providing the most relevant and reliable information possible, whether it comes from Google or non-Google domains. Today's users expect to get the right answer for their search queries right away, no matter where they are or what device they are using. And there are more ways than ever for users to find those answers, including websites, apps, and social media, in addition to search engines. This competition puts intense pressure on Google to provide users with the best possible answers for their queries. It is not in Google's interest to make it harder for users to get the information they want.

The article cited in these questions does not provide detailed information on data collection or study methodology, so Google cannot comment on Jumpshot's specific findings. But it is inaccurate to say that the data cited in the article shows that any searches on Google "keep users on Google's properties." The article states that 50.33% of the desktop Google queries and that "almost 2/3rds" (not "more than 70%") of mobile Google queries in the study set

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[1] Rand Fishkin, *Less than Half of Google Searches Now Result in a Click,* SparkToro (Aug. 13, 2019), https://sparktoro.com/blog/less-than-half-of-google-searches-now-result-in-a-click/.

[2] *Id.*

resulted in zero website referrals. The fact that a user does not click on a link on a Google Search results page does not mean that the user has been "kept" on Google properties.

Searches on Google may result in zero website clicks for many reasons, which is not discernable without directly asking the user why they did not click a link. For example, a user may be satisfied by the information shown on the Search results page and have no need to click through to another page (including another Google domain), for instance because they searched for something like the weather and Google was able to supply the information immediately. At other times, users may not immediately click through to a page, but may instead use one of Google's features to help refine their query to one that they think will return more relevant search results. In many cases, after users refine to a better query, they then click on a website result and get the information they originally had in mind. For instance, if a user seems to have misspelled their query, Google offers a "Did you mean?" feature allowing the user to rerun it with the correct spelling. That second query might be counted in a survey as a second visit to a Google search property, but it has helped the user find on the Web the information they originally asked for. Still other users may be dissatisfied with Google's results and either terminate their search task or switch to an alternative, such as Bing, Amazon, Yelp, or Wikipedia.

As the data cited in the article reflects, the vast majority of clicks on Google Search results pages are to non-Google domains. For more than two decades, Google has sent extraordinarily large amounts of traffic to third-party websites at no charge. We drive billions of visits to sites across the web every day, and the volume of traffic we've sent to the open web has increased every year since Search was created. Google is 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.

3. Has Google ever been approached by another business about giving access to its cache of web crawl data? If so, what was Google's response?

Like many other firms that create and maintain indexes for web search, Google offers syndication options that allow other providers to show search results on their own sites that customize or extend Google's search results. Google's syndication program, known as Google Programmable Search Engine (formerly known as Google Custom Search), is based on Google's core search technology and allows providers to create a search engine for individual sites, collections of sites, or the whole web. Providers can select and customize the categories of content they receive from Google's indexes, allowing them to create custom "topical" search engines that focus on specific sources or kinds of content (https://developers. google.com/custom-search/docs/topical). Google also offers APIs for certain kinds of content,

such as Google Maps (https://cloud.google.com/maps-platform) and Google News (https://newsapi.org/s/google-news-api). Providers can customize the look and feel of the search results they receive from Google and can supplement those results with additional information or promotions from other sources. For partners that want even greater control and customization, Google also individually negotiates syndication agreements. For more information, please see the guide for users available at https://developers.google.com/custom-search/docs/overview.

4. Google reviews no longer appear in Google's search index. Why did Google remove its reviews from its search index?[3]

We are always working to improve our services to be the most useful to our users. When a user enters a query, Google constructs a single set of search results by drawing on different indexes—each organized around a particular type of content—based on Google's assessment of what kind of content would be most useful for answering the user's query. Google has assembled indexes for categories of content such as websites, images, videos, book excerpts, scholarly articles, news, information about local places, and numerous other categories. Maintaining separate indexes for different kinds of content allows Google to provide more relevant and useful search results that take account of the distinct features and attributes of different kinds of content.

Google user reviews at one time appeared on Google+ Local pages, which had public-facing URLs that were indexed by our search engine. However, Google+ Local pages were deprecated several years ago, and Google+ was later shut down. Information about local places is maintained in what we call our local index. Because Google user reviews do not appear on web pages apart from Google Search results pages, they are not included in Google's index of web pages found on the Internet. Instead, Google user reviews are part of the local index that Google maintains for information about local places, which also includes information such as addresses, hours of operations, and phone numbers.

Today, reviews about local places from Google users may appear in a formatted search unit on Google Search results pages when a user searches for information about local places. The local index is used to display relevant search results when a user enters a query related to a place or with a local intent, such as "cascal," "pizza washington dc," or "restaurants near me." Google uses ranking systems to validate that information from the local index is likely relevant to show to the user; just as with other parts of our search engine, we rigorously test and evaluate these systems to help ensure that they are showing information only when it's useful.

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[3] Ethan Wolff-Mann, *Google might be hiding the fact that its own reviews are shoddy*, Yahoo Finance (Aug. 23, 2018), https://finance.yahoo.com/news/google-might-hiding-fact-reviews-shoddy-135640955.html.

Google maintains and makes available in Search a number of other pieces of structured information and treats that information in a similar way. For instance (as described above), just as factual information from our local index may be shown in response to a query about a place, factual information from our Knowledge Graph may be shown in response to a query about a person or thing. The Knowledge Graph likewise does not have its own distinct set of URLs; rather, information from it appears in response to users' queries.

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.

5. Did Google.com see any decrease in usage after adding (a) a third ad to mobile search results, and (b) a fourth ad to mobile search results?[4]

Google's core business model for Search depends on providing users with relevant and reliable information—both paid and organic—on the search results page. There are a maximum of eight text ad positions open to advertisers on every Google search engine results page (SERP): four at the top and four at the bottom. We don't run ads against the vast majority of our searches, and typically the most ads appear on commercial queries. Those are typically queries for "TV set" or "sneakers," where people are looking to buy a good or service. And for those queries, there's lots of competition, both on and off-line, around the globe. People go to sites like Amazon and eBay for general retail searches. In fact, independent studies show that 55% of product queries in the U.S. now start on Amazon. (See https://www.vox.com/2016/9/27/13078526/amazon-online-shopping-product-search-engine.) Plus, there are retail ads on platforms like Facebook, Bing, Snap, Twitter, Amazon, and Pinterest. People search Trulia, Redfin, and Zillow for real estate.

Whether Google shows eight ads or no ads in response to a particular query, or any number of ads in between, depends on a number of factors including: The context of the query (for example, whether it is a highly commercial query such as a query for car insurance); the competitiveness of the auction (that is, how many advertisers are participating and how high those advertisers are willing to bid); and the quality of each advertiser's ad and landing page. We provide information to advertisers regarding ad position and ranking and how an advertiser may get their ad above the organic search results (as an example, see https://support.google.com/google-ads/answer/1722087?hl=en.

Google's decisions on ad load are informed by research into ads blindness, which is a measure of how users respond to low-quality ads over time by becoming 'blind' to them (the idea being that users learn to skip over ads which they believe are less relevant). Ads blindness harms the

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[4] Gerrit De Vynck, *Google Search Upgrades Make it Harder for Websites to Win Traffic,* Bloomberg (July 13, 2020), https://www.bloomberg.com/news/articles/2020-07-13/how-google-search-changes-make-it-more-expensiveto-Win-traffic.

long-term profitability of ad-funded platforms because it makes clicks less valuable to advertisers and trains them to lower the prices they are willing to pay for inventory. Google therefore has no incentive to increase ad load in favour of short-term gains. This is demonstrated by the changes that Google has made in practice. For example, on the basis of studies run in 2013, Google decreased the search ad load on its mobile traffic by 50%. For more information regarding research into ads blindness, see https://research.google/pubs/pub43887/.

Given concerns about ads blindness, Google's eight-ad limit (and the number of ads it shows in response to each individual query) is designed to maintain the long-term profitability of the ecosystem by ensuring that users only see high-quality ads that promote a good experience. Many ad-funded platforms have failed in the past (at least in part) because they sought to maximise short-term commercial interests and displayed too many ads—low quality or otherwise.

With regard to the presentation of search ads, Google's 'honest results' policy (https://www.google.com/about/honestresults/) means that search ads must be clearly labelled and set apart from the organic search results. This means that changes to the labelling of search ads are generally driven by changes to the presentation of organic search results in order for ads to remain detectable within the new organic format.

Changes to the presentation of search ads are rigorously tested across a wide variety of metrics, including impact on users and advertisers. For example, a proposed change may lead to more "short clicks" (where users quickly hit the back button on their browser to return to the Google SERP) and fewer "long clicks" (where users stay on the advertiser's landing page for a relatively long time, suggesting that they found the ad and corresponding website useful). Or, a proposed change may affect the amount of time it takes users to decide on what to click (known as "time to first click") or adversely affect quality trade-offs between paid and organic content (known as "whole-page metrics"). Google analyses dozens of similar variables, including the impact on short-term and long-term revenue, when deciding whether or not to launch globally any change to the design of its SERP.

Changes to the format, display, and presentation of search ads can have complicated effects, which is why Google reviews all changes to the layout of its SERP according to both design and engineering principles by running live traffic experiments that compare the new layout to the old. These experiments are extensive and can test dozens of metrics. No one metric is "best," and Google strives to make decisions in a holistic way that takes into account the trade-offs. This makes it difficult for Google to generalize about the effect any particular change may have on user behavior, advertiser behavior, or click-through rates.

6. What percentage of bids does Google win on its own ad exchanges?

Publishers utilizing Google Ad Manager's auction to sell their ad inventory are able to solicit bids from Authorized Buyers (e.g., third-party demand side platforms ("DSPs"), ad networks, and trading desks) and Open Bidders (third-party ad networks and ad exchanges), as well as

buyers utilizing Google-owned platforms such as Google Ads and Display & Video 360. These bidders compete in a unified auction against each other, the publisher's guaranteed sales, and other demand sources configured by the publisher. All participants in the unified auction, including those using Google-owned platforms, compete for each impression on a net basis, and no auction participant receives any information about any other party's bids prior to completion of the auction. The highest net bid wins. The channel through which a bid is received does not otherwise affect the determination of the winning bidder.

7. Does Google leverage data from Android and Chrome while bidding on its ad exchanges? And does Google make this data from Android and Chrome data available to third parties?

Like all DSPs and programmatic buyers, Google uses a wide range of data to inform its bids. The primary data Google uses for bidding from Android and Chrome are identifiers such as browser cookies and Android Advertising ID values, which Google's ad exchange makes available to all eligible bidders.

8. Does Google in any way limit advertisers from working with non-Google parties to audit or assess the efficacy of Google's advertising and/or advertising tools?

Advertisers are free to work with a variety of verified third-party measurement providers that comply with our policies to measure the effectiveness of their ads across Google's advertising products. Supporting these third-party offerings promotes user choice by offering a variety of vendors that advertisers may choose to use in verifying their advertising campaigns' success.

9. Google's search and ad server site "tags" collect user data from thousands of websites.

Please identify (a) whether Google stores this data; (b) how Google uses this data; and (c) whether Google's advertiser tools gain access to this information.

Publishers using Google's sell-side advertising technology products embed in their pages pieces of HTML code that are referred to as ad "tags." Whenever a web page is visited, the user's web browser tries to load the content of that page. If the page uses Google's ad server, the HTML code in the page will contain an instruction to the user's browser to request a file from Google Ad Manager or AdSense. In response to such a request, Google Ad Manager or AdSense can return an ad or record an event in its logs (e.g., the fact that a user arrived at this particular page, information that is stored in accordance with customer and user settings, as well as Google's Privacy Policy). The ad request typically includes information about the user's IP address, any cookies on the user's browser that are associated with the ad server's domain, and the URL of the page that issued the request.

When Google Ad Manager or AdSense is requested to conduct an auction for an impression, it typically includes that information in the bid requests it sends to eligible participants, including

third-party bidders participating as Authorized Buyers (e.g., ad networks, trading desks, and DSPs), ad exchanges, and ad networks participating in Google's Open Bidding service, and Google-owned bidders such as Google Ads and DV360. All participating bidders receive broadly the same information in their bid requests, including information regarding the impression, the site or app on which the impression is located, the cookie ID, and the user's browser. Each bidder then may combine that information with its own data to calculate an appropriate bid.

Google also provides conversion tracking through a combination of code "tags" and cookies for both search and display advertisers. Floodlight is a conversion tracking system for the Google Marketing Platform and is available to users of Google Campaign Manager, Search Ads 360, and DV360. For more information about Floodlight, see its support page at https://support.google.com/searchads/answer/7298761?hl=en&ref_topic=6054260. Google Ads provides its own conversion tracking functionality, and reports can be accessed through Search Ads 360 as well. For more information about Google Ads conversion tracking, see the support page at https://support.google.com/google-ads/answer/1722022. Finally, Google Campaign Manager, Search Ads 360, and DV360 also can access certain Google Analytics session data for users that reach an advertiser's site through ads placed through each respective channel. For more information about accessing Google Analytics data for conversion tracking, see the relevant support pages at https://support.google.com/analytics/answer/3339192?hl=en; https://support.google.com/analytics/answer/7068033?hl=en&ref_topic=6186449; and https://support.google.com/analytics/answer/6261873?hl=en. Conversion tracking data is provided to advertisers in aggregated reports. For an explanation of differences in the data provided by each conversion tracking option, see https://support.google.com/searchads/answer/2791195?hl=en.

10. In 2019, how much did Google pay Apple for Google Search to be the default on iOS?

We compete with other companies to provide Google Search in Apple's Safari browser. While we cannot speak publicly about the specific terms of an agreement, we are proud that companies like Apple choose Google Search as a default search engine because it gives their users "the best" search experience. (See, for example, the November 19, 2018 article in Fast Company, titled "Apple CEO Tim Cook says this is the best search engine out there," https://www.fastcompany.com/90269911/apple-ceo-tim-cook-says-this-is-the-best-search-engine-out-there.) We're constantly innovating so that we continue to provide the highest quality results that reflect the most relevant and reliable information on the web. We think consumers benefit from giving them easy access to our products, but users can (and do) easily change their default search engine and turn to our competitors.

11. Does Google permit hardware device manufacturers to run Android and gain access to the Google Play Store without also making Google the default search engine on that device?

Yes. Device manufacturers can obtain licenses to the Play Store for their devices running Android, through Mobile Application Distribution Agreements ("MADAs"). MADAs are negotiated commercial agreements that contain no restrictions on the default search engine.

12. In its response to Questions for the Record sent Google on September 13, 2019, Google stated that since 2014 it had not changed in methods for determining which apps must use Google's in-app payment or purchasing services. Please identify: (a) If Google has changed its criteria since then; (b) what criteria Google applies when identifying which developers must use the Google Play credit card processing system; and (c) whether Google plans to expand the type of apps that must use its payment processing service.

Google's policy regarding the use of Google Play In-App Billing has remained consistent over the past five years. Android developers offering products within a game downloaded on Google Play, or providing access to game content, must use Google Play In-App Billing. 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. Google Play supports flexibility for Android developers to choose how to run their businesses and make money. Developers choose whether to offer their apps for free or not, whether to offer in-app purchases or not, and whether to serve advertisements or not. Google Play also supports a variety of payment methods, including credit and debit cards, Google Play gift cards, direct mobile carrier billing, and Paypal. Android developers can also choose to distribute their apps outside of Google Play. Most Android devices come preinstalled with more than one app store, and users may also add additional app stores or install apps directly from a developer's website.

13. What amount of notice does Google provide developers ahead of suspending their apps from the Google Play Store?

When publishing in Google Play, developers agree to follow the Google Play Developer Program Policies and Developer Distribution Agreement. We work hard to help developers avoid policy violations (see https://www.youtube.com/watch?v=ZDS4diFfBmQ), but when violations do occur, we're committed to ensuring developers understand how they can bring their app into compliance. When we detect serious violations of our policies that put users or their devices at risk, we remove the app immediately from Google Play. In other cases, we may warn developers and require them to fix the policy violation within a certain amount of time before we remove the app from Google Play. If a developer feels that their app has been removed in error, they can reach out to Google Play's Policy Support Team (using the instructions provided in the email notifying them of the policy violation, or directly from Google Play's Help Center) to easily appeal the removal decision. For more information, please

see https://play.google.com/about/developer-content-policy/ and https://play.google.com/about/developer-distribution-agreement.html.

In addition, Google Play app developers have access to many resources that provide guidance on common violations, the policy review process, and how to get an app back on the Play Store, including:

- How to Handle a Policy Violation on Google Play, https://www.youtube.com/watch?v=xjRqFbTHUOQ&feature=youtu.be; and

- Play Console Help support, https://support.google.com/googleplay/android-developer/answer/2491922?hl=en&ref_topic=3453554.

14. Please identify how often and at what level of precision Android registers an Android user's location when that user is not using an app that requires location services.

Our goal is to provide users with robust tools to control what data they share. All Google-licensed Android phones have a device location toggle that is accessible in device settings. If a user turns this toggle off, the phone does not share device-based location information with any apps (and thus, features that use location may not work properly). The user can still receive search results and ads based on IP address.

When device location is turned on, users can control the frequency with which Google and other apps and services access device location. A user can decide to deny permission, allow permission only when an app is in use, or allow permission all the time. The precision and frequency of location data transmitted depends on many factors, such as the functionality of the apps and an individual user's settings.

15. Please identify all purposes for which Google uses location data collected on Android users through Google Maps or Waze.

As Google describes in its Privacy Policy (https://policies.google.com/privacy?hl=en&gl=de#infocollect), Policies site (https://policies.google.com/technologies/location-data?hl=en&gl=de), and various product pages, location information plays an important role in providing useful and meaningful experiences with Google's products and services. Google provides users with granular control to turn on or off device, app, and Account settings that manage uses of location data. Depending on a user's settings, when device location is enabled, Google Maps and Waze can provide turn-by-turn directions, and show restaurants and other destinations nearby. When a user enables ads personalization and other Google Account settings, Google may also use account information, including user activity that includes location information, to serve more relevant ads to the user. Google does not target ads based on an individual's precise location, like GPS coordinates. Instead, we may use broader location signals to allow advertisers to direct ads in areas most geographically relevant

to an individual. For example, a deep dish pizza restaurant in Chicago doesn't usually want to direct ads to people in London.

16. In July, the Information reported the existence of "Android Lockbox," which "for years tapped what the company has referred to as 'sensitive' data collected by Android to selectively monitor how users interact with non-Google apps."[5] Please identify: (a) All Google acquisitions or product decisions that were made based off or were informed by data from Android Lockbox; and (b) what steps developers of non-Google apps can take to prevent Google from collecting usage data on their Android apps.

Android is the first of its kind: a privacy-centric open-source platform, open to all, even to our competitors. We are constantly innovating to ensure our users are getting the best possible experience on Android. Each year, we develop and improve upon the Android system, including supporting previous versions. Like all smartphone manufacturers, we need to understand how users use their device, whether certain apps are constantly crashing, and the health metrics of phones to address system operating issues and improve the product.

We also believe in choice, transparency, and control. Our users can choose whether or not they want to allow us to understand how they use our products and services to give them a better experience. If they prefer we do not use their usage and diagnostic data, they can also choose not to provide it or opt-out at any time. This data is available to other Android developers as well, assuming their users agree, so they too can better serve their users.

Since 2014, the Android App Usage Data API has been used by Google and Android developers who have been authorized by Android OEMs or users to access basic data about app usage—such as how often apps are opened—to analyze and improve services. The API does not obtain any information about in-app activity, and our collection of this data is disclosed to and controllable by users.

More information on this topic appears in Google's Help Center under the topic "Share usage & diagnostics information with Google" (https://support.google.com/accounts/answer/6078260?hl=en).

17. In 2019, Google was fined $170 million by the FTC and New York Attorney General for violating the Children Online Privacy Protection Act (COPPA) by knowingly collecting the data of children under 13 without their parents' consent.

a. Did YouTube use the data it illegally acquired from children to draw more advertisers to YouTube?

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[5] Alex Heath et al., *Internal Google Program Taps Data on Rival Android Apps*, The Information (July 23, 2020), https://www.theinformation.com/articles/internal-google-program-taps-data-on-rival-android-apps.

b. Did YouTube feed the data it illegally acquired from children back into its YouTube algorithm?

Because the answers to these questions are related, we have grouped together our response to Question Nos. 17.a and 17.b.

We are committed to ensuring that content made for kids on YouTube follows all applicable rules and requirements, and, as part of that commitment, we make YouTube creators stipulate whether each video they create is child-targeted. YouTube settled the inquiry into the alleged COPPA issues referenced above by agreeing to a Stipulated Order with the FTC and the New York Attorney General, which was approved by a federal district court on September 10, 2019. The Stipulated Order specifically addressed, and limited, the use of information covered by the Order, including certain data that YouTube had historically collected. YouTube has complied with the terms of the Order and remains committed to compliance in the future.

18. Please identify all factors that determine how Google ranks videos, including whether YouTube videos are in any way favored by Google in search results.

Our success in Search is dependent upon providing users with the highest quality results in response to their queries. Google Search is not designed to favor YouTube over other online digital platforms in Search ranking. Our organic Search algorithms look at many factors that apply to all relevant sites, such as freshness of the page, when ranking our organic content. Whether the site is owned and operated by Google is not one of those factors. Our Search algorithm applies the same standards to find, index, and rank sites, whether or not they are Google owned and operated. Search uses external Search Quality Raters from across the vast majority of U.S. states to ensure we are providing users with relevant information. We have published our webmaster guidelines (https://support.google.com/webmasters/answer/35769) and search quality rater guidelines (https://static.googleusercontent.com/media/guidelines.raterhub.com/en//searchqualityevaluatorguidelines.pdf) publicly so that website owners can understand how we do that.

When a user conducts a query, YouTube is one of several online sources for video that may appear in Search results for inquiries that may call for video content. Unless a user specifies that they are seeking a result specifically from YouTube, or another platform like Twitch, Search will attempt to provide the most relevant result for their query. If a user specifies a prefered website (for example, by searching for "cat videos on Vimeo"), Search will produce results from that website.

19. The Wall Street Journal reported that Google has changed its algorithm to effectively privilege YouTube in search results.[6] Please identify these changes.

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[6] Sam Schechner et al., *Searching for Video? Google Pushes YouTube Over Rivals*, Wall St. J. (July 14, 2020), https://www.wsj.com/articles/google-steers-users-to-youtube-over-rivals-11594745232.

We disagree with the claims in that article and the methodology used. The article's methodology relies heavily on the number of views, likes, or comments a video has to determine its assessment as to what is the most relevant information. Those kinds of "self-reported" signals are specific to a site or platform, and each platform has its own way of counting them.

To ensure that our signals are used equally and fairly for all sites, we use signals that are not specific to any one site or platform. As noted in response to Question No. 18, instead, our organic Search algorithms look at many factors that apply to all relevant sites, such as the freshness of the page, when ranking our organic content. Whether the site is owned and operated by Google is not one of those factors. Our Search algorithm applies the same standards to find, index, and rank sites, whether or not they are Google owned and operated. Search uses external quality raters from across a vast majority of states to ensure we are providing users with relevant information. We have published our webmaster guidelines (https://support.google.com/webmasters/answer/35769) and search quality rater guidelines (https://static.googleusercontent.com/media/guidelines.raterhub.com/en//searchqualityevaluat orguidelines.pdf) publicly so that website owners can understand how we do that.

20. Over what time period did Google's homepage include the "Install Google Chrome" promotion (below) for Internet Explorer users?

Google periodically markets Chrome on Google.com to visitors using Internet Explorer. Chrome offers a simple, secure, and fast browsing experience for all internet users, including users of Google's web-based services, and Google wants to promote that to its users. These periodic promotional campaigns on Google.com on Internet Explorer have been run for over a decade.

21. Over this time period, how many users downloaded Chrome by clicking on this promotional button?

Chrome's user base has grown since its launch in 2008. We continue to see the value in providing users of Google services on Internet Explorer with information about Chrome

browser because it provides a secure and fast browsing experience for Google's web-based services.

22. Chrome used "bundle partners" to package Chrome browser downloads with other downloadable software such as DivX player.[7] Please identify these bundle partners, the stipulations of these partnerships, the time frame in which the bundle partnerships were in place, and the number of Chrome downloads that resulted from the partnerships.

At times, we partner with companies on promotion and distribution agreements of certain products, including Chrome. For example, we partner with Avast, where Avast distributes Chrome and Google Toolbar products with Avast's consumer antivirus products. Google pays Avast a fee in connection with these offerings. While we can't publicly disclose the details of our confidential and commercially sensitive agreements, these types of agreements have benefitted both Google and our partners, alongside partners' offerings, as well as users, by offering users the opportunity to use Chrome, which is a simple, secure, and fast way to browse the internet.

23. If a user is browsing through Chrome's "incognito mode," does Google have the ability to connect that user's browsing data and activity with the user's identity?

Chrome's Incognito mode allows users to browse the internet without their browsing history being saved to their device. This is helpful, for instance, where users share a device. But, as presented on each new Chrome Incognito window, a user's browsing activity in Incognito is still visible to the websites they visit:

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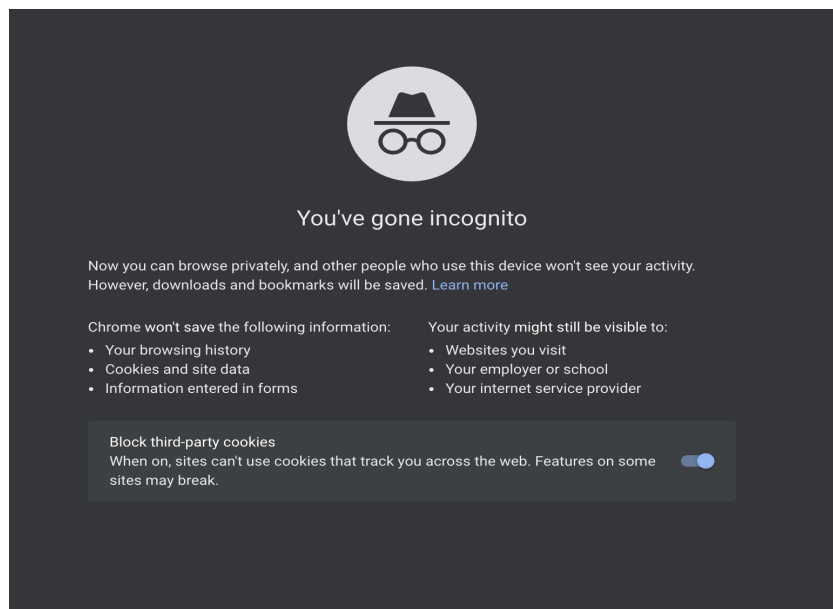
[7] *See, e.g.*, DivX Inc., Form 10-K (2010), https://sec.report/Document/0001193125-10-055714/d10k.htm.

If a user chooses to sign in to their Google Account while browsing in Chrome Incognito, their browsing activity would be stored in their Google Account and associated with their use of those services. For example, if a user signs into their Gmail account on gmail.com while in Incognito mode, Google would have a record that the user had logged into their Gmail account.

24. Please explain why Google now hides full URLs in the Chrome address bar.[8]

Protecting Chrome users from security issues like phishing and dangerous sites has been a priority for Google. Security is the primary reason for improving how URLs are displayed in the Chrome address bar, and we constantly explore opportunities to further user security. As we shared in an August 12, 2020 Chromium Blog post titled "Helping people spot the spoofs: a URL experiment" (https://blog.chromium.org/2020/08/helping-people-spot-spoofs-url.html), on today's web, URLs remain the primary way users determine the identity and authenticity of a site, yet we know URLs suffer from usability challenges. For example, there are many ways that attackers can manipulate URLs to confuse users about a website's identity, which leads to rampant phishing, social engineering, and scams. In one study, more than 60% of users were fooled when a misleading brand name appeared in a URL's path.

Google is in the business of providing consumers with helpful and relevant tools and information, and Chrome is no exception. Different browsers approach this URL challenge in a number of ways, including showing only the domain by default, or visually highlighting the registrable domain (the "most significant" part of the domain name). In Chrome Milestone 86, we're experimenting with how URLs are shown in the address bar on desktop platforms. Our goal is to understand—through real-world usage—whether showing URLs this way helps users realize they're visiting a malicious website, and protects them from phishing and social engineering attacks. This experiment is planned to roll out to a small percentage of users of Chrome's stable channel (more information on Chrome's stable channel is available at https://support.google.com/chromebook/answer/1086915?hl=en). If users participating in the M86 experiment want to see the full URL, they can simply hover over the URL and the full URL will appear. If users want to opt out of this feature, they can right click on the URL and select "Always show full URLs." The measured increase in user protection will inform whether Chrome launches it as a full feature for all users. In previous years, we have likewise explored other security-minded improvements to URL display.

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[8] Corbin Davenport, *Google resumes its senseless attack on the URL bar, hides full address on Chrome 85,* Android Police (June 12, 2020), https://www.androidpolice.com/2020/06/12/google-resumes-its-senseless-attack-on-the-url-bar-hides-full-addresses-on-chrome-canary/.

25. In January, Google announced its Chrome browser would phase out the use of third-party cookies.[9] Will Google designate Google Analytics as a first-party cookie?

a. Will Google's changes to Chrome curb Google's own data collection to the same extent that these changes will curb data collection by non-Google firms?

b. Will non-Google advertising technology services have the same access to Chrome data as Google's advertising technology services?

c. Please identify all forms of data that Google will collect through Chrome that will no longer be available to non-Google firms.

d. Please identify how competing browser cookies are any different than Google's own tracking devices.

e. After Google retires third-party cookies in Chrome, will Google still be able to engage in cross-site tracking?

Users are demanding greater privacy—including transparency, choice, and control over how their data is used—and we recognize that the web ecosystem needs to evolve to meet these increasing demands. Some browsers, including Apple's Safari and Mozilla's Firefox, have reacted to these concerns by blocking third-party cookies without first developing alternative ways to support key existing use-cases. We believe this blunt approach has unintended consequences for both users and the web ecosystem. It undermines the business model of publishers who rely on ads to make their content freely available to the public. It also encourages the use of invasive workarounds like fingerprinting, which can actually reduce user privacy and control. That is why Chrome is working actively across the ecosystem to build technologies that enable a more private and sustainable web before phasing out support for third-party cookies.

In August 2019, we announced a new initiative, known as the Privacy Sandbox, to work with the web community to develop privacy-preserving and open-standard mechanisms that can sustain a healthy, ad-supported web and so render third-party cookies obsolete (see https://www.blog.google/products/chrome/building-a-more-private-web/). Subsequently, in January 2020, we announced our intention to phase out support for third-party cookies in Chrome over the next two years, while working across the ecosystem with browsers, publishers, and advertisers on new technologies to build a more trustworthy and sustainable web (see https://blog.chromium.org/2020/01/building-more-private-web-path-towards.html).

These changes to Chrome will affect all companies that currently rely on third-party cookies, including Google. A cookie is generally considered first party when the domain of the website

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[9] Dieter Bohn, *Google to 'phase out' third-party cookies in Chrome, but not for two years*, The Verge (Jan. 14, 2020), https://www.theverge.com/2020/1/14/21064698/google-third-party-cookies-chrome-two-years-privacysafari-firefox.

visited by the user matches the domain of the cookie; if the domains don't match, then the cookie is considered third party to the website. Accordingly, Chrome treats Google cookies set on non-Google websites—including the websites of publishers using Google's ad products—as third-party cookies. This is the same treatment Chrome applies to the third-party cookies of others in the ad-tech industry.

By contrast, the website publisher itself can continue to use first-party cookies to understand its relationship with its users as it always has. As a tool designed to help publishers achieve that goal, once publishers implement Google Analytics tags on their sites, Google Analytics sets a first-party cookie on behalf of the publisher on the publisher's domain; this is a standard practice for site analytics services, and Google additionally provides a browser extension tool for users to disable Google Analytics tags running on publisher sites from sharing information about their visit activity with Google Analytics. Regardless of which vendor's tools are used to actually set a first-party cookie, however, they are only transmitted when the user visits that specific domain (not other domains using the same tools). They thus can be used to, for example, avoid showing the user the same ad on repeated visits to that site, but cannot be used to track the user's behavior across sites.

26. Please identify the total number of days in 2019 on which Google priced Nest smart speakers below-cost.

27. For the total number of Nest smart speakers sold in 2019, what percentage did Google sell below-cost?

Because the answers to these questions are related, we have grouped together our responses to Question Nos. 26 and 27.

Google Nest smart speakers compete with a range of products from companies including Apple, Amazon, Sonos, and more. The smart home market is rapidly expanding, and we continue to face competition from around the globe. The current price of Google Nest smart speakers is available on the Google Store at https://store.google.com/us/category/connected_home, and pricing is largely driven by the significant competition from these other companies. Sales data for these speakers ranges widely by retailer, region, and promotional period, and we don't have more detailed public metrics on the particular pricing and sales information requested.

28. Does Google require that automobile manufacturers seeking to use Google Maps also use Google Assistant?

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. Our goal is always to provide a user with the most accurate and useful information while on Google Maps. We are proud of our partnerships with many automobile companies who value the experience provided to their customers by Google Maps.

Under our Google Automotive Services Agreements, automobile manufacturers that elect to preinstall Google Automotive Services Applications, which include Google Maps and Google Assistant and others, are free to also preinstall other competing assistant services, as are the users upon purchasing the vehicle.

29. When Google Assistant receives an implicit invocation or voice command, what factors does Google consider when determining which "Action" to invoke?

Google Assistant helps people get things done, anytime, anywhere. When someone asks a question or tells it to do something, Assistant responds to the request in the most helpful way possible—whether someone is seeking assistance with everyday tasks, controlling smart home devices, enjoying music or games, communicating with friends and family, getting quick answers or local information, or a variety of other things.

When Assistant receives an implicit invocation, such as, "Hey Google, play a game," the Assistant analyzes that request, in combination with useful information such as recent requests or the type of device being used, to identify possible interpretations of the user's intent. Assistant can then present the user with a list of Actions that developers have mapped to those intents, and the user can select which Action he or she wishes to use.

For more information on implicit invocations, please see https://developers.google.com/assistant/conversational/df-asdk/discovery/implicit and https://developers.google.com/assistant/conversational/build/invocation?tool=builder#create_implicit_invocations.

For more information on the signals that help Assistant rank available responses and how they are weighted based on how a user engages with Assistant and his or her personal preferences, please see https://developers.google.com/assistant/howassistantworks/responses.

30. Are there instances in which voice application developers must pay to make their "Action" an available option to an implicit invocation?

No. Developers can design their Action so that users can make a request to perform a task without invoking the Action by name. Please see: https://developers.google.com/assistant/conversational/df-asdk/discovery/implicit.

31. When consumers order food directly through Google Search, Google Maps or Google Assistant, Google's services choose a delivery partner such as DoorDash or Postmates.

a. How does Google determine which delivery partner is selected to complete the delivery? For example, does Google run a real-time auction or are delivery partners for specific vendors pre-selected?

b. What steps must a delivery company take to become a delivery partner?

c. How much does Google charge delivery companies who become delivery partners?

d. Does Google have similar programs in place for voice commands?

Providing users information on how to order from local restaurants is another way we help users find the information they are looking for while supporting businesses that seek to reach customers. When a user searches for food delivery, Google will display providers to fulfill their online orders. Users can order food on Google if they have a Google Account, and restaurants can receive online orders for pickup or delivery directly from Google Search, Maps, or Assistant.

Google partners with a number of third-party delivery services including Postmates, Delivery.com, Slice, ChowNow, and Hungr, to provide this service. Restaurants must be supported by at least one partner to be available via Google for food ordering. Restaurants can use their Google My Business dashboard to manage the "Order Online" button on their Business Profile. This button can be turned on or off for restaurants that work with supported partners. Restaurants can remove a selected unauthorized provider from their Business Profile on Google Search, Maps, or Assistant, using an opt out form available at https://support.google.com/business/contact/business_food. If a restaurant reports that they have no business relationship with any provider, the "Order Online" button will be removed.

Which delivery partner is selected to complete the delivery is dependent on a number of factors, including which partner(s) the restaurant has selected to work with and which partner the user selects. If a restaurant is supported by more than one partner, users can select which partner they want to use; this also applies when users order food with Assistant.

Google currently does not have fees associated with food delivery. Service and delivery fees are set by the partner.

For more information, please see Google Food Ordering Help https://support.google.com/foodordering#topic=9780529, Google My Business Help https://support.google.com/business/answer/9503613, and Actions on Google https://developers.google.com/actions/Food-ordering.

32. Would buying Fitbit enable Google to use a Fitbit user's heart rate to sell ads targeted to that user?

We have publicly committed that "Fitbit health and wellness data will not be used for Google ads." (Google Company Announcements post dated November 1, 2019, "Helping more people with wearables: Google to acquire Fitbit," https://www.blog.google/products/hardware/agreement-with-fitbit/). This commitment extends to Fitbit user's heart rate. We will keep that promise.

33. Google recently announced it is investing in home security provider ADT. Please identify: (a) How Google will collect, process, analyze, or store data from currently

installed ADT devices; and (b) How Google will integrate ADT data into its advertising technology.

Our strategic partnership with ADT is aimed at furthering a central goal of our smart home efforts, to create the next generation of the helpful home with new security solutions that will better protect and connect people to their homes and families. We plan to use Google's machine learning capabilities to enhance ADT's security monitoring to give customers fewer false alarms, more ways to receive alarm events, and better detection of potential incidents inside and around the home.

Google cares deeply about giving users transparency, choice, and control over their data in our products and services, and our partnership with ADT is no different. We have committed that, for our Nest home products, video footage, audio recordings, and home environment sensor readings are not used in advertising or for ad personalization. When a user interacts with the Assistant, we may use those interactions for ad personalization. For example, if a user asks, "Hey Google, what's the weather today?" we may use the text of that voice interaction (but not the audio recording itself) to show personalized ads. Of course, users can always review their Google settings to control the ads they see, including opting out of ad personalization completely. Learn more about the Google Assistant and the choices available at https://support.google.com/accounts/answer/2662856 and https://myaccount.google.com/yourdata/assistant?pli=1.

Google has also 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.

Written Questions for the Record from the Honorable Henry "Hank" Johnson, Jr.

1. "Efficient infringement"—the use of another company's patents without authorization, based on the understanding that litigation will be too slow to meaningfully stop the infringement and will ultimately only result in the payment of a royalty if the suit is lost (approximately the same royalty that would be paid up front if a license were taken) is a way in which dominant companies currently may be stifling innovation and undermining competitors.

As the Chairman of the subcommittee with responsibility for oversight of the patent system, I am concerned about the impact of efficient infringement on the ability of patents to spur innovation and allow startups to effectively compete against established companies.

1.1 To me, these factors suggest that the Supreme Court's decision in *eBay v. MercExchange*, 547 U.S. 388 (2006), to reverse the presumption of awarding injunctive

relief to a prevailing patent owner should be reevaluated to ensure that smaller patent owners are playing on a level playing field in patent disputes. Do you agree or disagree, and why?

Google participates in the patent system in many ways. We have built a valuable portfolio of over 60,000 worldwide patents and applications, with over 30,000 U.S. patents and applications. We license out that portfolio, which covers our most innovative and valuable technologies, and enforce those patents in litigation when necessary. We also regularly engage in negotiations that result in Google taking a license to patents in the technology areas in which we operate. As a result, we have a balanced view of the patent system.

Google believes that the Supreme Court decision in *eBay v. MercExchange*, 547 U.S. 388 (2006) provides a balanced and practical framework for awarding injunctive relief to patent owners, especially when the patent owner makes or is actively developing a product that practices the patent. Legislation overturning the Supreme Court's unanimous *eBay* decision would disrupt this balance and force courts to end the careful, fact-specific analysis that they currently conduct. This would be harmful to innovation and to competition because it takes away the discretion of courts and would allow a permanent injunction against a product, even if the patent holder makes or sells no product, the patent covers only a trivial aspect of the accused product, or the patent's validity is doubtful. Although there are many circumstances in which injunctions are appropriate and currently granted, the issuance of this remedy based on a presumption, without full consideration of the important equitable factors as outlined by the Supreme Court, would fail to take into account the interests of the public in supporting innovation and the interests of consumers in the specific markets concerned.

1.2 What steps does your company take to ensure that any intellectual property it gains access to during acquisition negotiations is not copied or used without authorization if those acquisition negotiations prove to be unfruitful?

Google takes intellectual property rights seriously. Google complies with all contractual and other legal requirements regarding intellectual property, trade secrets, or other confidential business information that business partners and potential business partners provide to Google, including during acquisition negotiations.

Written Questions for the Record from the Honorable Pramila Jayapal

1. What is Google's market share of the ad exchange?

It is difficult to accurately measure market share for these types of products, as companies in the digital advertising space do not disclose their sales, volume, or profits on a product-by-product basis. And advertisers and publishers often use multiple, different advertising technology solutions and vendors for the same purpose. Industry reports suggest that large advertisers on average are using four or more competing advertising technology tools at any given time, while large publishers on average are using six competing advertising

technology tools at any given time. For more information on publishers' use of multiple advertising technology tools, see https://www.adexchanger.com/platforms/google-ad-manager-policy-changes-dont-hurt-publishers-according-to-advertiser-perceptions/. Some publishers like *The Wall Street Journal, The New York Times*, and *The Washington Post*, for example, use even more. (See, for example, ads.txt specifications publicly disclosed by those publishers at wsj.com/ads.txt, nyt.com/ads.txt, and washingtonpost.com/ads.txt.) It is also common for publishers and advertisers to use several exchanges or even a combination of open and private exchanges. As a result, Google reiterates that it is not currently aware of any definitive internal or external measures of market share in the Ad Tech sector, and by providing an answer to this question, Google is not agreeing that the ad exchange is the proper or relevant antitrust market given the numerous ways in which publishers and advertisers transact online. Further, in order to provide a true definition of market share for a legal competition analysis purposes, it would be necessary to undertake a rigorous analysis—one including economic evidence of actual consumer behavior, information concerning capabilities of numerous industry players, and expert analysis.

Our products face robust competition in a crowded advertising technology industry. Google Ad Manager competes within a large, diverse, and constantly evolving advertising marketplace and faces competition from hundreds of companies, including well-known tech companies with ad exchanges, supply side platforms (which are now largely functional equivalents), or those that sell their own inventory, such as Amazon, Facebook, Adform, and Twitter. Other companies include OpenX (which reported 450 million unique users and 300 billion impressions per month); AT&T's Xandr (which acquired AppNexus, a leading global advertising marketplace and digital advertising service provider); Verizon (Verizon Media Exchange); Index Exchange (which reported a four-year growth rate of 509%, handles 90 billion requests everyday, more than the New York Stock Exchange, and was recently selected by GroupM, the largest media buyer in the world, to receive a majority of GroupM's demand); PubMatic (which processes over 55 billion daily ad impressions); Genesis; Beachfront; Comcast's FreeWheel (largest SSP for OTT inventory); Smart+; RTL Group's SpotX; AdTelligent; AppLovin (which expected to achieve over $1 billion in revenue in 2019); Chartboost (which in 2019 grew to be a top 4 exchange at a few different points throughout the year); Altice's Teads; Sovrn; Magnite (formerly Telaria and Rubicon Project, which claimed to have reached over 1 billion consumers and that it would be the world's largest independent sell-side advertising platform, grew 32% year-over-year by mid 2019 (above expectations), and now has a combined market cap of roughly $750 million); TripleLift; Smaato; Epom; Fyber (which reported 20% year-over-year programmatic business growth in November 2019); IronSource (which expected to achieve $1 billion in revenue in 2019, and also acquired Supersonic with a reported 1 billion monthly users and expected to generate $250 million in sales); and InMobi (which recently launched what was reportedly the world's largest native advertising exchange).

2. What policies and practices does Google use to ensure that it is serving the interests of businesses selling and buying ad space?

Google designs its advertising technology products to meet the needs of advertisers, publishers, and users, all of whom benefit from a healthy ad-supported Internet ecosystem. Google designs its products for advertisers to help them increase return on their ad spend, reach the right audiences at the right time, and avoid ad fraud. On the publisher side, Google designs its ad technology products to enable publishers to facilitate competition and increase revenues for their ad inventory, while protecting their site or app from fraud, malware, and unsafe or inappropriate ads. Our policies prohibit, for example, promoting content that contains malware, using techniques that hide the true destination that a user would be directed to by the ad, and advertising counterfeit products, tobacco, or drugs. And throughout, Google seeks to protect users' privacy and otherwise enhance the user experience. Google has a comprehensive set of ads policies that are designed to promote all of these objectives. For more information, please see https://support.google.com/adspolicy/answer/6008942?visit_id=636993873482636863-2861675087&rd=1.

3. According to Google's 2019 shareholder report, Search accounts for 73% of Google's share of advertising revenues. Please identify all factors that make it more likely that advertising revenue will go to Google properties rather than non-Google properties.

Advertisers decide where to focus their advertising spend, on Google properties and/or non-Google properties, and may do so based on a variety of factors unique to an advertiser and its advertising goals. For ads on Google Search, a business pays only when someone clicks on or interacts with an ad. Plus, the business can decide how much it is prepared to pay—making search advertising far more affordable than other types of advertising. So rather than having to launch a big pricey campaign, merchants can start with small budgets and scale as they grow. Merchants can also reach customers that they might not be able to through other forms of advertising—for example, more than 36 percent of clicks to American advertisers come from overseas. For more information, see Google's Economic Impact reports, https://economicimpact.google.com/.

Google does not restrict an advertiser's ability to spend on third-party sites or apps. And, when advertisers use Google tools to buy ads on third-party sites, publishers keep an average of 69% of the revenue generated. See: https://blog.google/products/admanager/display-buying-share-revenue-publishers.

4. Does Google allow third party auditors to verify whether the company's metrics for third party advertising Return on Investment (ROI) are accurate?[10]

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[10] Competition and Markets Authority, *Digital Advertising Services: Qualitative Research Report* (June 2020), https://assets.publishing.service.gov.uk/media/5efb3fded3bf7f769d2695af/Digital_Advertising_Services_Research.pdf at 8 (Return on investment was seen as an issue by some respondents for both Facebook and Google. It was recognised that ROI was more difficult to calculate for display advertising, but some respondents mentioned that they needed to use third parties to help calculate it – and also that they felt both Facebook and Google's own metrics tended to overstate their effectiveness.)

Yes. Many of Google's metrics across search, display, and video ads on the web and in apps have been audited and accredited by the Media Ratings Council. These metrics include various aspects of our clicks, served impressions, viewable impressions, and invalid traffic detection and filtration. Google also has developed partnerships with leading measurement technology providers to deliver third-party measurement solutions in a way that gives advertisers the ability to obtain independent measurement data. Certain of these integrations have likewise undergone an independent audit by the Media Rating Council for accreditation. Together, these efforts help ensure that the metrics Google's advertising solutions deliver are trusted, align with industry standards, and can be compared across providers.

Written Questions for the Record from the Honorable Jamie Raskin

A recent trend the online news space is that platforms, including Google via its search function and Google News product, can scrape news content from newspaper websites, host significant portions of news stories in their curated news service, and pass back none of the ad revenue they generate through Google News to the publishers who fund a crucially important public service. By some accounts, as much as 40% of Google News users never look beyond your site.

Professional news coverage is a costly and sometimes dangerous proposition that has seen enormous reductions in revenue from local and national news in the past decade. Between 2007 and 2017, newspapers' ad revenue shrank from $45 billion to $16 billion a year. During the same period of time Google's ad revenue skyrocketed. And a recent study released by the News Media Alliance found that in 2018 Google received over $4 Billion in revenues from crawling and scraping news content without paying the publishers for that use.

Because of Google's dominance in Internet search, local news outlets need to design their websites in a way to maximize the prevalence of their content in search results. According to a 2018 study by Advance Web Rankings, Google's top three search results get 30%, 15%, and 10% of all desktop clicks respectively, with 75% of all clicks going to the first page of search results. Google has previously stated that the purpose of search was to connect the user out into the internet as quickly as possible. However, the use of Accelerated Mobile Pages (AMP) within Google's mobile architecture upends that proposition by allowing Google to host newspaper content on their servers via its Content Delivery Network (CDN) so the reader remains inside the Google ecosystem when they click on a story. This permits Google to further collect consumer data and determine how to monetize ad services.

Further, in January, Google announced a plan to phase out allowing third party cookies that allow marketers to target web advertising for its Chrome browser business, which accounts for 70 percent of desktop browsing and over 40 percent of mobile browsing.

This will take away the tool that allows news websites to analyze user data, seriously hampering competitive engagement in the digital ad space with Google.

1. Does the acceptance of the use of AMP by a publisher affect the placement of the publisher in Google's search results on mobile devices?

Accelerated Mobile Pages (AMP) is an open-source HTML framework overseen by the AMP Open Source Project (now an OpenJS Foundation project due to a recent transition, see https://openjsf.org/projects/). 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. (Specifically, the carousel user experience involves being able to click on an article in the carousel and then quickly swipe between pieces of full pages of content. The interface that allows this quick swiping between results uses privacy-preserving pre-rendering, caching, and embeddability, which are implemented via the AMP framework on the technical level.) Historically this was also the case for the Top Stories carousel in mobile devices; however, as explained in a recent blog post titled "Evaluating page experience for a better web" (https://webmasters.googleblog.com/2020/05/evaluating-page-experience.html), Google is introducing a new ranking signal called page experience and once that ranking update goes into effect, the Top Stories carousel in mobile will no longer be limited to AMP content.

2. Does Google require publishers to use AMP to appear in their News Carousel on Mobile devices?

As discussed in response to Question No. 1, a web page's status as an AMP Page is not one of the factors considered in a search ranking. There is a type of specialized search result called the "Top Stories carousel" on mobile devices, in which a selection of links to fast-loading mobile pages of news stories are displayed together to allow a user to quickly access them. When a user clicks on a story, the feature is designed so they can then quickly swipe between other stories from the carousel. As noted above, the interface that allows this quick swiping between results uses caching, privacy-preserving pre-rendering, and embeddability (implemented via the AMP framework on the technical level).

Non-AMP content can and does appear everywhere else on the Search results page, including as part of the "Top Stories" block—which can display content above the AMP carousel—or in the organic links that make up the remainder of the page.

As explained in response to Question No. 1, once Google launches the new page experience ranking signal, non-AMP pages will be eligible to appear in the Top Stories carousel on mobile devices.

3. What user data does Google collect when users access an AMP page? Is any of that data shared with or sold to the news publishers whose reporting was accessed? If not, why not; if so, what fees, if any, does Google charge to news publishers? If the data collected through AMP and CDN is not shared with news publishers or is sold to them, please explain why this is not an anticompetitive practice levied against news publishers.

Accelerated Mobile Pages (AMP) is an open-source HTML framework overseen by the AMP Open Source Project. Open-source projects are designed for the benefit of all users and the digital ecosystem. Ensuring publishers are able to get robust analytics insight is a core design goal for the Project, and AMP strives to create parity between the user data that publishers can collect on AMP pages and the data that publishers could collect in a traditional non-AMP environment, without violating user privacy expectations.

The type of data Google is able to collect depends on the means through which a user accesses a page (e.g., on the publisher's origin website, through the Google AMP viewer, or through other means, such as a third-party AMP viewer). However, generally, Google limits its data collection from the Google AMP Cache, the Google AMP Viewer, and AMP JS serving to the data collection that is necessary to continue operating its service.

AMP currently supports publishers' collection of analytics information using features like "amp-analytics," which can integrate with third-party systems without compromising the AMP file speed or size. All major analytics providers are participating in the project and more information can be found at https://amp.dev/support/faq/publisher-monetization/.

4. With the phase out of third-party cookies in Google Chrome, please describe that change that Google is making, when it will be implemented, and Google's justification for the change.

5. With the phase out of third-party cookies in Google Chrome, does Google plan also to cease data collection of user browsing activity within Chrome for both desktop and mobile? If not, describe each category of data that Google will continue to gather.

Because the answers to these questions are related, we have grouped together our response to Question Nos. 4 and 5.

As we discuss in our answer to Chairman Cicilline's Question No. 25, last year, we announced a new initiative known as Privacy Sandbox to develop a set of open standards to fundamentally enhance privacy on the web. As we explained in a blog post in January of this year (https://blog.chromium.org/2020/01/building-more-private-web-path-towards.html), our goal

for this open source initiative is to make the web more private and secure for users, while also supporting advertisers and publishers.

This initiative includes our plan for ending support for third-party cookies in Chrome, a change that will apply equally to Google as to other third parties. This change will provide increased privacy for users.   Other major browsers, including Apple's Safari and Mozilla's Firefox, have already phased out third-party cookies, but they did so without first developing alternatives to support key existing use-cases. We believe such moves could actually undermine user privacy by encouraging invasive workarounds like device fingerprinting, which reduce user privacy and control.

We are actively working with the web community and forums like the W3C to develop improved privacy protections for users while providing publishers and advertisers the tools they need to sustain a healthy, ad-supported web. We plan to phase out support for third-party cookies in Chrome within two years, while addressing the needs of users, publishers, and advertisers.

6. Please describe why the phase out of third-party cookies in Google Chrome does not effectuate an anticompetitive practice given Google's share of the online search market and online targeted advertising market.

Google's plan to eventually phase out support for third-party cookies is not anticompetitive. Rather, it reflects Google's pro-consumer response to user demands and is consistent with actions taken by other web browser providers.

Users are demanding greater privacy and controls over their data, and we are working to meet those demands. When other browser developers, including Apple and Mozilla, acted to block third-party cookies, their steps were not pre-announced and were implemented without offering alternative solutions to support key existing use-cases, like anti-fraud and ad measurement efforts. We believe these actions may result in unintended consequences for both users and the web ecosystem, including by encouraging the use of invasive workarounds like fingerprinting, which can actually reduce user privacy and control.

As explained in response to Question Nos. 4 and 5, in January 2020, we announced our initiative called Privacy Sandbox, an open, collaborative process to develop new privacy-preserving ways to support key use-cases for third party cookies, with the goal of ultimately phasing out support for third-party cookies. In contrast to Apple and Mozilla, however, we outlined a phased two-year rollout to work across the ecosystem to build technologies for sustaining a healthy, ad-supported web.

Google is committed to working with the web community and industry forums to create replacements for third-party cookies that better protect user privacy while meeting the needs of publishers and advertisers. Google believes that its collaborative approach to developing

open standards that respect the needs of all stakeholders is a better solution in the long run for users, publishers, and advertisers.

Written Questions for the Record from the Honorable Kelly Armstrong

1. In 2018, Google restricted export of the DoubleClick ID through Google Data Transfer, correct?

a. If correct, please explain the reasoning for this action.

In 2018, Google announced that it was in the process of making important changes to its Data Transfer feature in YouTube, Display & Video 360, and Campaign Manager as part of Google's ongoing commitment to user privacy and compliance with privacy laws. Google no longer provides the DoubleClick user IDs in Data Transfer for impressions served on YouTube and recorded in Campaign Manager and Display & Video 360. As of March 31, 2021, this change will also be applied to all global events recorded in Campaign Manager. Google is committed to partnering with advertisers to help refine strategies to effectively use and manage data based on these changes. Google is investing heavily in the expansion of Ads Data Hub and providing alternative solutions and services for many key use-cases such as custom attribution, audience management, media optimization, and offline-to-online.

b. Did this action reduce competition from other digital advertising participants?

No. Advertisers remain free to (and do) choose from among Google's many competitors that facilitate the purchase of ad inventory (e.g., Amazon, Facebook, Snap, AT&T's Xandr, Adform, Smart, Twitter, Adobe, The Trade Desk, MediaMath, and Verizon Media, among others). These companies have their own policies with respect to use of personal identifiers for ads reporting and measurement.

2. In 2015, Google prohibited third parties from buying YouTube advertisements via Google's AdX, which resulted in all YouTube demand-side activity being conducted through Google products, correct?

In 2015, Google decided to make the considerable investment to expand the ways in which advertisers could purchase the increasingly popular TrueView skippable video ad format—which gives users control over the ads they see before watching videos on YouTube. This investment gave advertisers the ability to purchase TrueView reservation ads programmatically (albeit not by a real-time auction) using its Display and Video 360 product, which increased the availability of the format beyond Google Ads. The expansion of TrueView to this new channel required significant engineering resources and, at the same time, Google decided to wind down support for offering YouTube ad inventory for sale via AdX. Only display (non-video) ad inventory shown adjacent to YouTube video watch pages and non-TrueView video ads, viewed using a desktop computer (not a mobile device), had been available via AdX and represented a small portion of overall YouTube ad spend.

YouTube ad inventory is not exclusively available to advertisers through Google "products"; rather, advertisers can purchase YouTube inventory through the following channels:

- YouTube Partner Sales Program: Certain YouTube partners work directly with advertisers to sell and serve ads on content they own and show on YouTube.

- Direct Reservation: A direct contract is negotiated between the advertiser and Google. These can be booked directly through the YouTube sales team.

- Google Ads: Advertisers can purchase YouTube inventory through Google Ads, Google's online ad buying storefront.

- Display & Video 360: Advertisers can purchase instream inventory, including ads in YouTube TrueView format, and bumper ads through DV360.

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.

a. If correct, please explain the reasoning for this action.

As of 2015, YouTube was shifting its focus to TrueView because the skippable ad format provided a better experience for users and better return on investment for advertisers. At that time, third-party buying platforms accounted for a small percentage of overall YouTube ad buys despite Google investing considerable amounts to support that capability. Based on that, and because Google had made a substantial investment to build a complex API integration between Display & Video 360 and Google Ads (which ultimately took almost three years to complete), Google decided to not allocate engineering resources to continue to support the purchase of YouTube inventory through AdX and instead decided to focus those resources on maintaining and further developing its more popular YouTube formats and buying channels.

b. Did this action reduce competition from other demand-side advertising participants?

No. Google's demand-side platform competitors remain highly successful and can access valuable video ad inventory just about anywhere, including on popular video and social platforms like Facebook, Dailymotion, Vimeo, Instagram, Amazon, Pinterest, Twitter, and Snapchat, as well nearly every other website and mobile application. Amazon's DSP, for its part, typically vies with Google's Display & Video 360 to be the most used demand-side platform (according to industry surveys), and The Trade Desk, which went public in 2016 at an approximate $1 billion market capitalization, is now worth approximately $22 billion. Advertisers also have many other demand-side platforms to choose from, including: Adform, Addition, Adobe, Adot, Criteo, Epom, MediaMath, Rakuten Marketing, Roku's DataXu, SingTel's Amobee, Tabmo, RTL Group's SpotX, Verizon Media, AT&T's Xandr, and Zeta. Advertisers can also decline to utilize a DSP entirely and purchase video inventory directly from publishers,

particularly large publishers like Facebook, Twitter, LinkedIn, and Snapchat that have developed their own buying platforms.

c. Google subsequently limited the interoperability of third-party analytics on YouTube and required the use of Google's Ads Data Hub, correct?

i. If correct, please explain the reasoning for this action.

To enhance user privacy, Google has been in the process of deprecating the use of third party ad tracking pixels on You Tube, including by third-party measurement vendors. Google instead offers Ads Data Hub, a privacy-centric measurement solution that enables third-party measurement vendors to continue to provide measurement on ad campaigns.

ii. Did this action result in reduced competition for advertising analytics products?

Google has not reduced competition for advertising measurement products. Third-party measurement vendors still interoperate with YouTube (via Ads Data Hub) to inform advertisers about the viewability, reach, and other metrics of the ads they paid for and to confirm the return on their investment in advertising. To enhance user privacy, Google has been deprecating the use of third-party ad tracking pixels on YouTube, including by third-party measurement vendors. Google instead offers Ads Data Hub, a privacy-centric measurement solution that enables third-party measurement vendors to continue to provide measurement on ad campaigns. This allows our YouTube advertising product to provide for the best and privacy-safe user experience.

3. Please list the first party services that Google uses to collect user information. Please include the first party services that only collect user information after the user consents to such collection.

Our mission is to organize the world's information and make it universally accessible and useful, and we are committed to giving users access and control over their data. We also develop tools for our users, from our Android-based products to smart home products like Nest, to improve their lives. We have an array of first-party services, apps, and devices available to the public, from our core tools like Search, Gmail, and YouTube, to Chrome and ChromeOS, to our Android Platform and the Google Play Store, and even to devices like Pixel and Nest. A partial list of products can be found at https://blog.google/products/. Like any modern technology or internet-based company, most of these first-party services collect some user information to provide them with the services they request. Many of our services require a user to create a Google account, which presents them with information about Google's data practices, the company's privacy policy, and a number of privacy controls. Some services can be used without an account, and users can learn about Google's collection and use of data through our industry-leading, in-context notices, privacy reminders, and of course our Privacy Policy (https://policies.google.com/privacy). We are happy to work with the Committee to identify which products are of interest.

4. Mr. Pichai testified that Google no longer collects user data on Gmail for advertising purposes. Does this include when the user consents to such collection?

We announced in 2017 that we would no longer scan users' Gmail for the purposes of delivering ads. We do not seek users' consent to have their email content scanned for the purpose of delivering ads because we do not scan emails for that purpose in any case.

5. Please list the categories of information that Google collects on users (e.g., location, education level, search history, etc.)

As we also noted in response to Representative Armstrong's Question No. 3, 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 are committed to giving users access and control over their data. 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), and we encourage Google users to visit their Google Account (https://myaccount.google.com/), where they can review the data Google has collected and can choose to export or delete the data we store.

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. For example, if a user has signed in to their account and has "Web and App Activity" enabled, we may collect and store in the user's Account data about their activity on Google's services, like the user's search query and the URL they select on the Search results page. This can be helpful to users who wish to store this history; it also allows us to make better predictions about helpful results. If that user is not signed-in, however, we may still collect information about that query for use in some of our tools, like Google Trends (https://trends.google.com/), or to improve our products. We would not, however, associate that information with the user's Google account.

Our Privacy Policy describes in detail the categories of information we collect. The most common of these include:

- Identifiers such as name, phone number, and address, as well as unique identifiers tied to the browser, application, or device used.
- Demographic information, such as age, gender, and language.
- Commercial information such as payment information and a history of purchases made on Google's services.
- Internet, network, and other activity information such as search terms; views and interactions with content and ads; and activity on third-party sites and apps that use our services.
- Geolocation data, such as may be determined by GPS, IP address, and other data from sensors on or around a user's device, depending in part on the device and account settings.

- Other information created or provided by users, such as the content created, uploaded, or received (like photos, videos, emails, docs, or spreadsheets).
- Inferences drawn from the above, like ads interest categories, if permitted by the user's settings.

We continue to build and improve upon our services to ensure users understand the data they are sharing and can make informed choices about their data.

6. At what frequency does an Android phone record a user's location? At what frequency is this information relayed back to Google?

Google provides users with granular control to manage device location settings. The frequency and type of location information that we collect depends on a number of factors, including the service being used and an individual user's settings.

When users enable device location settings on their mobile phones, including a setting called Google Location Accuracy, the phone can use sources to determine the most accurate device location, including GPS, Wi-Fi, mobile networks, and device sensors.

Users can choose to share their device location with Google products and services, or choose to disable device location settings. Users can also control the frequency with which Google and other apps and services access device location, by, for example, deciding to deny permission, or, on Android version 11 and up, allowing permission only when an app is in use.

More information is available in Google's Help Center under the topics "Manage your Android device's location settings" (https://support.google.com/android/answer/3467281) and "Choose which apps use your Android phone's location" (https://support.google.com/accounts/answer/6179507?hl=en).

Written Questions for the Record from the Honorable Ken Buck
for Sundar Pichai, CEO, Alphabet:

1. Mr. Pichai, Google's most popular products, each with more than one billion active users, including Search, Maps, YouTube and Gmail are supposedly free to use. Of course, most consumers don't necessarily understand they are in fact paying Google to use these products, but with another type of valuable asset – their data. Google has made repeated claims that you do not sell consumer data. Let's try to clear this up:

a. Yes or no, does Google monetize – not sell, but otherwise monetize – consumer data?

b. Does Google use consumer data in order to offer a targeted/behavioral advertising service to advertisers?

c. What percentage of Google's revenue is comprised of Google's various advertising services?

We do not sell our users' personal information to anyone. That is not our business model, and we have always made this a touchstone of Google's relationship with our users. Google also provides users with a range of controls over how their information is used, including for personalized ads.

Users can permit Google to personalize the ads they see using their activity and account data, but they do not have to allow this. Our services remain free for users who choose not to allow the use of their data to target ads. Indeed, ads on Google Search primarily rely on the context of the current search query to select ads, and not on any user information. A user can see how ads are personalized to them and change their advertising settings at https://adssettings. google.com/.

Information regarding revenue generated by Google, by segment and source, is disclosed on a quarterly and annual basis in our Forms 10-K and 10-Q. Recent filings are available at https://abc.xyz/investor/.

2. Mr. Pichai, could you tell me all the types of data that Google collects on its users? I'm going to run through some categories.
   i.   **Gender identity**
   ii.   **Sexual preference**
   iii.   **Race**
   iv.   **Age**
   v.   **Marital status**
   vi.   **Income**
   vii.   **Location data**
   viii. **Education level**
   ix.   **Health or fitness data**
   x.   **Search history**
   xi.   **Websites and locations visited including in Incognito Mode sessions of**
   xii.   **Chrome and Google Maps**
   xiii. **Online purchases made**

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 are committed to giving users access and control over their data. 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), and we encourage Google users to visit Google Account (https://myaccount.google.com/), where they can review the data Google has collected and can choose to export or delete the data we store. Note that Google has a policy of not showing personalized ads based on sensitive categories, such as race, religion, sexual orientation, or health.

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. For example, if a user has turned on "Web and App Activity" settings, when that user is signed in and conducts searches on Google, we may collect and store in a user's Account, for example, the user's search query, IP address, and the URL they select on the Search results page. This can be helpful to users who wish to store this history; it also allows us to make better predictions about helpful results. If that user is not signed-in, however, we may still collect information about that query for use in some of our tools, like Google Trends (https://trends.google.com/), or to improve our products. We would not, however, associate that information with the user's Google account.

Our Privacy Policy describes in detail the categories of information we collect. The most common of these include:

- Identifiers such as name, phone number, and address, as well as unique identifiers tied to the browser, application, or device used.
- Demographic information, such as age, gender, and language.
- Commercial information such as payment information and a history of purchases made on Google's services.
- Internet, network, and other activity information such as search terms; views and interactions with content and ads; and activity on third-party sites and apps that use our services.
- Geolocation data, such as may be determined by GPS, IP address, and other data from sensors on or around a user's device, depending in part on the device and account settings.
- Other information created or provided by users, such as the content created, uploaded, or received (like photos, videos, emails, docs, or spreadsheets).
- Inferences drawn from the above, like ads interest categories, if permitted by the user's settings.

We continue to build and improve upon our services, to ensure users understand the data they are sharing and can make informed choices about their data.

3. Mr. Pichai – is it fair to say that Google uses all of that data to create a profile on the user - even those without Google Accounts? Do you use that profile for the purposes of targeted advertising?

Depending on users' settings, Google will show personalized ads based on information provided by the user or inferred from the user's activity. Every Google user can visit https://adssettings.google.com/ to turn off personalized ads altogether. Users who are signed in to a Google Account can see the information used to personalize ads and make changes.

We make many Google Services, such as Search, Maps, or YouTube, available to individuals even without a Google Account. Like the vast majority of internet services, when an individual uses our services without a Google Account, we store the data we collect with unique identifiers (such as a cookie ID) tied to the browser, application, or device with which the user accesses our services. The data associated with those cookie IDs may be used for personalized advertising, if permitted by the user's settings. Users can also manage some of the ways their data is collected, by configuring their browser settings (e.g., to clear or block all or some cookies) or device settings. As described in our Privacy Policy, we also provide individuals who use Google Services without a Google Account with additional ways to manage the data Google associates with their browser or device. For example, users without a Google Account can choose whether their Search activity is used to offer more relevant Search results and recommendations by visiting https://google.com/history/optout.

4. Mr. Pichai, two weeks ago, the Global Project Against Hate and Extremism found that campaign ads for both Joe Biden and President Trump ended up on Russian propaganda channels on YouTube. I assume neither campaign asked for their ads to be there, how did they end up on those channels?

i. Can you guarantee all of us on this Committee that ads we purchase through Google will never be on an extremist, hateful, or exploitive video or web site?

ii. If our ads do appear on extremist content, am I correct that if someone views or clicks on that ad a portion of the money Google takes from our campaign will go to the purveyors of that content? And Google gets paid as well, correct?

iii. How can advertisers guarantee that their ads will remain brand safe? Do they just have to rely on Google?

iv. To be clear, I pay Google to place my ad, my ad makes money for Google wherever it is placed, and I rely on Google to tell me how well Google performed. Is that a conflict of interest?

v. Can I use another service to put my ad on YouTube?

Google helps to enable a free and open web by helping publishers monetize their content and advertisers reach prospective customers with useful, relevant products and services. Maintaining trust in the ads ecosystem requires setting limits on what we will monetize.

Google policies prohibit a range of misconduct by those who place content on our platforms, including dangerous or derogatory content; content that is illegal, promotes illegal activity, or infringes on the legal rights of others; and content that misrepresents the owner's origin or purpose. We, for instance, put significant effort into curbing misinformation in our products, including a policy against news content by foreign state-sponsored news organizations that conceal their affiliations with foreign governments. We also actively work to provide users and

advertisers with more information about the content they are seeing to allow them to make educated choices, including whether they advertise alongside specific content.

We have thousands of people working across our teams to make sure we're protecting our users and enabling a safe ecosystem for advertisers and publishers, and each year we share a summary of the work we've done. In 2019, we blocked and removed 2.7 billion bad ads—that's more than 5,000 bad ads per minute. We also suspended nearly 1 million advertiser accounts for policy violations. On the publisher side, we terminated over 1.2 million accounts and removed ads from over 21 million web pages that are part of our publisher network for violating our policies. Terminating accounts—not just removing an individual ad or page—is an especially effective enforcement tool that we use if advertisers or publishers engage in egregious policy violations or have a history of violating policy.

Candidates, campaigns, and other types of political spenders are treated the same as other similarly situated advertisers. We understand the concerns of our advertisers, who do not want their advertisements to appear on content that they find objectionable. We have long standing guidelines that prohibit ads from running on videos that include extremist or hateful content, and we enforce these rigorously. We've publicly discussed these actions in recent blogs, available at https://blog.youtube/news-and-events/expanding-our-work-against-abuse-of-our and https://youtube.googleblog.com/2019/06/our-ongoing-work-to-tackle-hate.html.

More generally, YouTube provides advertisers with many tools to control the placement of their ads. Advertisers can target specific topics, so that their ads appear alongside content related to those topics, and they can also target specific placements, so that their ads appear alongside certain YouTube channels or videos. Just as advertisers can target specific topics and placements, they can also exclude topics or placements where they don't want their ads to show. More information about how advertisers can ensure that their ads don't run on certain channels or alongside certain content can be found at https://support.google.com/google-ads/topic/3119080?hl=en&ref_topic=3119122.

YouTube ad inventory is not exclusively available to advertisers through Google "products"; rather, advertisers can purchase YouTube inventory through the following channels:

- YouTube Partner Sales Program: Certain YouTube partners work directly with advertisers to sell and serve ads on content they own and show on YouTube.

- Direct Reservation: A direct contract is negotiated between the advertiser and Google. These can be booked directly through the YouTube sales team.

- Google Ads: Advertisers can purchase YouTube inventory through Google Ads, Google's online ad buying storefront.

- Display & Video 360: Advertisers can purchase instream inventory, including ads in YouTube TrueView format, and bumper ads through DV360.

Advertisers can also use a range of third-party measurement vendors that interoperate with YouTube (via Ads Data Hub) to get information about the viewability, reach, and other metrics of the ads they paid for and to confirm the return on their investment in advertising.

5. Mr. Pichai, in a 2018 letter to Senators Markey and Blumenthal, Google's Vice President for Public Policy Susan Molinari explained that Google uses a phone's geolocation to "infer demographic information", certainly demographic information can mean things like race and income. How do these demographic inferences from where a phone is located impact the ads, offers, and opportunities a person might see?

Our Google Ads policies are written to protect users, advertisers, and publishers, and to prohibit advertisers from unlawful behavior like discriminating against users. We also give users control over the kinds of ads they see, including the ability to opt out of seeing any personalized ads. Our ads policies apply to all of the ads we serve, and if we find ads that violate our policies, we take action.

The types of location information that Google uses for ads depend on a number of factors, including the services and individual settings a user chooses. Our goal is to give users transparency, choice, and control as they navigate these options. As explained in our Privacy Policy (https://policies.google.com/privacy?hl=en&gl=de#whycollect), we don't show personalized ads based on sensitive categories, such as race, religion, sexual orientation, or health. Nor do we infer these sensitive categories, including race, from location information. We also do not allow advertisers to target precise locations for ads. We do use broader location signals to allow advertisers to direct ads in areas most geographically relevant to them. For example, a deep dish pizza restaurant in Chicago doesn't usually want to direct ads to people in London.

i. If there is a predominantly white neighborhood next to a predominantly Black neighborhood, would a Black person see different offers and opportunities on their phone than a white person a few streets away?

For over a decade, we've had personalized advertising policies that prohibit advertisers from targeting users on the basis of sensitive categories related to their identity, beliefs, sexuality, or personal hardships. This means we don't allow advertisers to target ads based on categories such as race, religion, ethnicity, or sexual orientation. We regularly evaluate and evolve our policies to ensure they are protecting users from behaviors like unlawful discrimination. For more information on our personalized advertising policies, please see https://support.google.com/adspolicy/answer/143465?hl=en.

6. Mr. Pichai, I understand that in the advertising business, mobile ads served on people's phones are most valuable especially if they take into account that person's

location. I know that Google through its Android operating system on phones knows where people using Android phones are located.

7. Please tell me how often does a Google Android phone check a user's location and communicate that back to Google and how accurate is that location data?

Because the issues raised in Nos. 6 and 7 are related, we have grouped together our responses. Google provides users with granular control to manage device location settings. The frequency and type of location information that we collect depends on a number of factors, including the service being used and an individual user's settings.

When users enable device location settings on their mobile phones, including a setting called Google Location Accuracy, the phone can use sources to determine the most accurate device location, including GPS, Wi-Fi, mobile networks, and device sensors.

Users can choose to share their device location with Google products and services, or choose to disable device location settings. Users can also control the frequency with which Google and other apps and services access device location by, for example, deciding to deny permission, or, on Android version 11 and up, allowing permission only when an app is in use.

We do not allow advertisers to target precise locations for ads. We do use broader location signals, to allow advertisers to direct ads in areas most geographically relevant to them. As we noted in response to Question No. 5 from Representative Buck, an example of this is that a deep dish pizza restaurant in Chicago doesn't usually want to direct ads to people in London.

8. Does it check location so frequently as to be fair to say that it is continuous?

The frequency with which Google collects location information depends on a number of factors, including the service being used and an individual user's settings. Users can choose to disable device location settings, and also control the frequency with which Google and other apps and services access device location by, for example, deciding to deny permission, or, on Android version 11 and up, allowing permission only when an app is in use.

9. Does an Android phone know when its user is at home or at work? Does it for example know that when an Android phone is in the same location without moving for say 8 hours at night that its user is likely sleeping and at home? Or the same with if the user is in the same location for 8 hours during the day that the user is at work?

Users can choose to share their device location with Google products and services, or choose to disable device location settings.

Users who want to type less and get directions faster when using Google Maps and other services can decide to set their home and work addresses. If users have decided to save their home and work addresses to Google, the addresses will appear when the user is signed in and

opens Google Maps and may also be used to help personalize their experience in other Google products and services.

Additionally, users can opt-in to a feature called Location History. Location History is a Google Account–level setting that saves location information to a private timeline. If a user turns this feature on, Google receives Location History for each device where that user is signed in and has Location Reporting turned on.

But, again, it's important to note: not all Android users opt-in to Location History, and not all Android users use Google Maps.

10. Does Google change the type of ads it sends to a user based on whether the user is at home or at work, or some other location?

The types of location information that Google uses for ads depend on a number of factors, including the services and individual settings a user chooses. Our goal is to give users transparency, choice, and control as they navigate these options. General location data, such as your current city or country, or whether you are in a residential or business area, may be used for ads, but we do not offer location targets that are precise, like GPS coordinates. This approach allows advertisers to reach a local audience, without using information that could identify a person's specific address. As noted in responses to other questions, this helps ensure that a deep dish pizza restaurant in Chicago doesn't have to direct ads to people in London.

11. Mr. Pichai if I use a Google Android phone to open Google Maps or Waze for directions while I'm driving, I understand that the phone must know my location to provide directions. How else is my location data used within Google's products?

Providing useful, meaningful experiences is at the core of what Google does, and location information plays an important role in doing just that. Google collects information about a user's location when they use our services, which helps us offer features like driving directions in Google Maps. In addition to driving directions and traffic conditions, location information helps make sure your search results include things near you, as well as providing information such as showing you when a restaurant nearby is typically busy. Location information also helps with other product functionality, like providing a website in the right language or helping to keep Google's services secure. Ads can be served based on general location. We use broad location signals to allow advertisers to direct ads in areas most geographically relevant to them. This allows a local, small business to ensure that its ads are directed to people who are likely to visit them (e.g., users in the same city) rather than at individuals located on the other side of the state or country.

i. Is my location data also used for advertising purposes or is it used to build an advertising profile of me that tells what businesses I have gone to or frequently visit?

Location data is used for advertising purposes. For example, we use broader location signals to allow advertisers to direct ads in areas most geographically relevant to them. As noted in other responses, this enables a deep dish pizza restaurant in Chicago to know they are not directing ads to people in London.

Whether and how information may be used for personalized ads will depend on a number of factors, including the services and individual settings a user chooses. In addition, depending on a user's settings, location data may be converted into anonymous, aggregated statistics for advertiser metrics. Ultimately, we work to ensure users have control over their data. For example, Web & App Activity can be disabled or deleted at any time, and Location History, which is opt-in only, can also be disabled or deleted at any time, including automatically after 3 or 18 months.

ii. If so, how long does Google keep that information about me?

We give users robust controls over their data. Both location data stored under Location History and Web & App Activity have user retention controls and tools that enable users to automatically delete data after either 3 or 18 months. We also recently announced that, by default, we will set the retention for new accounts, or for users turning on Location History for the first time, to 18 months. Users can also see all of the data associated with their account by visiting their Google Account page and can delete specific activity or bulk-data according to their preferences. Users can always modify these settings or change their auto-delete option. For more information, please see https://www.blog.google/technology/safety-security/keeping-private-information-private/.

iii. Can I view this data as part of my Google takeout, and can I delete it?

Users can view and delete their Google Accounts and Account information at any time, including Location History and Web & App Activity. Google also enables users to download or export their user data from the Google products they use. Google's "Download Your Data" (also known as "Takeout") tool allows users to export and download their content from several of our products, such as email, documents, Calendar, Photos, and YouTube.

12. Mr. Pichai, in recent weeks we have seen massive protests all over our country. I assume most of these protestors carried a phone and based on Google's market share more than half of them carried Google Android phones.

i. Is it possible for Google to use location to advertise to people at similar demonstrations?

ii. Did this type of advertising occur? And if so, did Google receive premium bids for this kind of location-based advertising?

Because the answers to these questions are related, we have grouped together our responses to Question Nos. 12.i and 12.ii. The location information that Google uses for ads depends on a

number of factors, including the services and individual settings a user chooses. Our goal is to give users transparency, choice, and control as they navigate these options. We do not allow advertisers to choose precise locations for ads targeting, like GPS coordinates. We do use broader location signals to allow advertisers to direct ads in areas most geographically relevant to them. It would be possible, for example, for an advertising campaign to target ads to geographically large neighborhoods in a metropolitan area, although they would not be able to target a specific street corner. On the question of whether there was a particular surge of ads related to demonstration locations, again, we do not allow advertisers to choose precise locations for ads targeting, like GPS coordinates.

iii. Are advertisers able to choose political affiliation as a filter for these types of ads?

We understand that political speech is a central part of the democratic process and advertising is an important part of that. We have never allowed microtargeting, and last November, we restricted audience targeting for election ads to only age, gender, and general location (zip code level). Additionally, we do not permit advertisers to target ads based on users' political affiliation. This aligns our approach to the way political ads have been running on TV, radio, and print media.

We want to improve voters' confidence in the political ads they may see on our ad platforms. We review all ads, including political ads, to ensure that they comply with our ads policies (https://support.google.com/adspolicy/answer/6008942?hl=en), which we make publicly available. We also have a number of protections to ensure our political advertising is appropriately supportive of the democratic process, including:

- Mandatory verification for all advertisers purchasing election ads, requiring that advertisers confirm they are a U.S. citizen or a lawful permanent resident (https://www.blog.google/topics/public-policy/supporting-election-integrity-through-greater-advertising-transparency/).

- A publicly accessible, searchable, and downloadable transparency report of election ad content and spending on our platforms, going beyond what's offered by most other advertising media (https://transparencyreport.google.com/political-ads/region/US).

- We require all election ads to contain a disclosure identifying who has paid for the ad. For most ad formats, we will automatically generate a "Paid for by" disclosure, using the information provided during the verification process. The disclosure displays the name of the entity that paid for the ad to users who see the ad (https://support.google.com/adspolicy/answer/9002729?hl=en).

iv. Does Google note in a consumer's profile that they have likely attended political protests?

v. Does Google create advertising audiences based on consumer protest activity or interest?

Because the issues raised in Nos. 12.iv and 12.v are related, we have grouped together our responses. We have never allowed microtargeting. If users have enabled personalized advertising in their account, they can view and edit how ads are targeted to them by visiting https://adssettings.google.com/. Attendance at or interest in a political protest is not a filter we use for targeted ads. As noted in prior responses to questions above, we've restricted personalized advertising for election ads to only age, gender, and general location (similar to zip code level). This aligns with our approach to the way political ads have been running on TV, radio, and print media.

13. Mr. Pichai, throughout this pandemic mobile phone data has been used to show the movement, or non-movement of people. Did Google use location data of Android phone users to generate these type of maps?

We are proud of our efforts to support public health officials and provide the public with helpful information about the COVID-19 pandemic through our COVID-19 Community Mobility Reports (https://www.google.com/covid19/mobility/), and we have created stringent privacy protocols in order to protect people's privacy concerning these efforts. No personally-identifiable information, such as an individual's location, contacts, or movement, will be made available at any point.

Insights in these reports are created with aggregated, anonymized sets of data from users who have turned on the Location History setting, which is off by default. People who have Location History turned on can choose to turn it off at any time in their Google Account and can always delete Location History data directly from their Timeline in addition to turning it off.

i. Did Google ask consumers to consent to their location data being used for potential COVID mapping for shelter in place orders or as states reopened?

In accordance with our Privacy Policy (https://policies.google.com/privacy?hl=en-US), Google only shares personally-identifiable data under limited circumstances, such as with consent or for legal reasons. Insights in Community Mobility Reports are created with aggregated, anonymized sets of data from users who have opted into using Location History, which is off by default. People who have Location History turned on can choose to turn it off at any time from their Google Account and can always delete Location History data directly from their Timeline. In Google Maps, we use similarly aggregated, anonymized data showing how busy certain types of places are—helping identify when a local business tends to be the most crowded.

ii. Could this consumer location data be used to identify or target a business for being open even if it wasn't categorized as essential?

The Community Mobility Reports show aggregate movement trends by region, across different categories of places. The reports are created with aggregated, anonymized sets of data, so no personally-identifiable information, such as an individual's location, contacts, or movement, will be made available at any point. The reports show types of places, such as transit stations or parks, and not individual businesses or addresses.

iii. Could this user location data be used to find or target a large gathering of people?

The Community Mobility Reports are created with aggregated, anonymized sets of data, so no personally-identifiable information, such as an individual's location, contacts, or movement, will be made available at any point. The reports show mobility trends based on types of places, such as transit stations or parks, and not specific places or numbers of people. For example, a Community Mobility Report may show that there has been a 5% change in mobility in parks in a certain country. Additionally, the data in the reports is not real-time information but rather the most recent information is from at least a few days prior.

iv. Could this user location data be used to infer that an Android user was diagnosed with COVID because he or she spent time at a hospital or clinic, or went to a testing facility? Maybe not the location by itself but when Google combines the location data with information you have from the user's Search history or the text from their emails?

The information in the mobility reports does not show trips to hospitals or COVID test centers. The Community Mobility Reports are created with aggregated, anonymized sets of data, so no personally-identifiable information, such as an individual's location, contacts or movement will be made available at any point. We do not scan a user's emails—or use a user's Search history—to attempt to make a medical diagnosis or inference concerning their health.

14. Mr. Pichai, Google has made a series of announcements over the last couple of years all framed as protecting consumer privacy. Some of those announcements restrict competitors in the advertising industry from collecting various types of consumer data. Yet, Google itself continues to collect more and more information. Please explain why in Google's view, consumers are better off if Google stops third-party cookies used by competitors, but still collects even more data on consumers for its own purposes?

Our business model is dependent upon meeting user demands, including users' interest in greater transparency and control over their data. We, and the broader tech industry, are developing our products to meet that demand.

In August 2019, we announced a new initiative, known as the Privacy Sandbox, to work with the web community to develop privacy-preserving and open-standard mechanisms that can sustain a healthy, ad-supported web without the need for third-party cookies. Previously, both Apple's Safari and Mozilla's Firefox announced that they would block third-party cookies, but they took these actions without first developing alternative ways to support key existing use-cases. We believe this approach may have unintended consequences for both users and

the web ecosystem, and can undermine the business model of publishers who rely on ads to make their content freely available to the public.

Because of these concerns, Chrome has committed to working actively to build technologies that enable a more private and sustainable web before phasing out support for third-party cookies. In January 2020, we announced our intention to phase out support for third-party cookies in Chrome over the next two years.

These changes to Chrome will affect all companies that currently rely on third-party cookies, including Google. Chrome treats Google cookies set on non-Google websites—including the websites of publishers using Google's ad products—as third-party cookies. This is the same treatment Chrome applies to the third-party cookies of others in the ad-tech industry.

i. Does Google collect data- from anywhere online – about consumers who do not have a Google account? Can these consumers opt out of Google's data collection about them, and if so, how?

Many of our services, including popular offerings like Search, Maps, or YouTube, do not require a Google account to use. Like many other internet services, when an individual uses our services without a Google account, we may collect the data associated with the user's use of our services. Depending on the service, such data may include unique identifiers (such as a cookie ID) tied to the browser, application, or device with which the user accessed our services. Whether any data is collected by Google, and, if so, what types of data, depends on which service the user used and the user's demonstrated preferences. Users have options to manage some of the ways data is collected—even without a Google account—by configuring their browser settings or device settings, or within the Google services themselves, as described in the Google Privacy Policy. For example, even without an account, users can opt out of their Search activity being used to to offer more relevant Search results and recommendations by visiting https://google.com/history/optout.

15. In June, you reorganized Google's reporting structure to have Google's Search team report into the Head of Ads and Commerce. In essence, Google's search algorithm now answers to the monetization team. Why did you make this change?

We sell ads, not search results. Our core mission is to provide the most helpful and relevant tools and information, and we do not allow ads to drive how we deliver organic search results. In June 2020, Prabhakar Raghavan's role was broadened as the new Senior Vice President of Search, Ads, Commerce, Geo, Payments, and NBU. There remain separate leads for our Search and Ads teams, each reporting to Mr. Raghavan, and the Search leads do not report to the Ads leads.

16. We talked about Google's relationship with China during the hearing. What is the status of Google's work in China?

We welcome the opportunity to answer your questions about Google's presence in Mainland China. We do not offer our main consumer products, including Google Search, Gmail, Google Drive, Google Play, and YouTube in Mainland China. We have a deep appreciation for the challenges of doing business in Mainland China. We have and will continue to consult widely—including with the U.S. Government—on those issues. We will continue to be thoughtful in any decisions that we make about offering products and services in China, and we will be transparent and consult with policymakers and other stakeholders about our decisions. Our activities in Mainland China are limited and carefully scoped, and we hope our answers will prevent our work from being unfairly characterized.

i. Are you working with the Chinese government, or any government supported companies, in any way?

Our business operations in Mainland China have several primary components. Our Ads business helps Chinese companies advertise their products. This is almost entirely for reaching potential customers abroad—clearly we do not have owned-and-operated publishing inventory within China. Our Cloud business serves multinational Chinese businesses in their Cloud operations outside of China. There is also a significant Android developer community in China that we support with our standard developer outreach. In addition, we occasionally participate in local level Chinese initiatives, such as with local arts and cultural institutes and forums that aim to get SMBs online.

ii. Are you in discussions to work with them? If so, what is the nature of your collaborations or the potential projects?

As discussed above in response to Question No. 16.i, our engagement in Mainland China is very limited, we will continue to be thoughtful in any decisions that we make about offering products and services in China, and we will be transparent and consult with policymakers and other stakeholders about our decisions.

17. Does Google sell ad space?

Yes, Google sells ad space on its owned and operated properties (e.g., Google Search, YouTube, Google Maps, and Gmail) and also provides technology to facilitate the purchase and sale of its partners' ad space. Google's digital advertising tools help publishers to generate revenue. In 2018, we paid our publisher partners more than $14 billion. Google's advertising solutions also help small and medium businesses connect directly with their customers online, whatever their advertising budget. They level the playing field with larger advertisers. Most recently we provided $340 million in ad credits to help small and medium sized businesses stay in touch with their customers during COVID-19 pandemic. Today, Google is just one player in a crowded advertising market, competing against Amazon, Facebook, Twitter, Snap, TikTok, and Pinterest, whose digital advertising businesses have and continue to grow. Ad competition has helped lower online advertising costs by 40% over the last 10 years. See, for example, the Progressive Policy Institute's July 8, 2019 report, "The Declining Price of Advertising: Policy

Implications," https://www.progressivepolicy.org/issues/regulatory-reform/the-declining-price-of-advertising-policy-implications-2/.

i. Does Google remarket ad space to advertisers?

Remarketing campaigns are one type of ad campaign that advertisers can choose from when marketing with Google. Remarketing is a type of ad campaign that allows advertisers to connect with people who previously interacted with the advertiser's website, mobile app, or video channel. Remarketing allows advertisers to position their ads in front of these audiences as they browse Google or its partner websites. We do not, however, allow personalized ads based on sensitive categories, such as race, religion, sexual orientation, or health.

ii. Does Google run the auctions to determine which ad can fill a specific ad box?

Publishers using Google's publisher-side ad tech products (e.g., Google Ad Manager, AdMob, or AdSense) can, among other sales methods, use those products to sell their ad inventory via an auction. Publishers use multiple platforms to sell ads and are not required to use Google. According to a recent independent survey, publishers use four to six different platforms to sell ads, while the top 100 advertisers use an average of four to seven platforms to buy ads. This recent study is available at https://www.adexchanger.com/platforms/google-ad-manager-policy-changes-dont-hurt-publishers-according-to-advertiser-perceptions/. Likewise, Google largely uses an auction format to sell ad inventory from its owned and operated properties. Which ads can show for a particular impression depends on a variety of factors, including the set of eligible auction participants set by the publisher, whether the publisher has blocked a certain advertiser from showing ads on its inventory, and the applicable floor price as set by the publisher.

18. Under Google's last-touch accounting, if I put in "running shoes" into a Google search, Google attributes to itself my purchase of new shoes when you show stats to Wall Street or to shoe company clients. Does this overstate the value of Google's contribution?

Google offers ad customers multiple ways to determine attribution for sales. We recognize that while some advertisers measure the success of their online advertising on a "last click" basis—giving credit for a conversion to the last-clicked ad or corresponding keyword—this methodology ignores the other ad interactions customers may have had. Google offers several attribution models, in addition to a last-click, including the following models:

- First interaction, which gives all credit for the conversion to the first-clicked/interacted ad and corresponding keyword.
- Linear, which distributes the credit for the conversion equally across all ad interactions on the path.
- Time decay, which gives more credit to ad interactions that happened closer in time to the conversion.

- Position-based, which gives a % of credit to both the first and last ad interactions and corresponding keywords, with the remaining % spread out across the other ad interactions on the path.
- Data-driven, which distributes credit for the conversion based on your past data for this conversion action.

More information about our attribution models are available at:
https://support.google.com/google-ads/answer/6259715?hl=en,
https://support.google.com/google-ads/answer/7002714?hl=en,
https://support.google.com/google-ads/answer/7003286?hl=en,
https://support.google.com/analytics/answer/1662518, and
https://support.google.com/analytics/answer/6148697.

19. Would Google approve of advertisers working with other companies to judge the effectiveness of Google's advertising?

Yes, Google makes available to advertisers a number of Google's own proprietary measurement solutions. Advertisers are also free to choose from verified third-party analytics services to collect detailed event-level data about Google ad campaigns and measure advertising effectiveness. Please see our response to Representative Buck's Question No. 4, above, for additional information relevant to this question.

20. Google has said that when publishers earn less than they think they should from advertising, it's because the quality of their ad inventory isn't as high as they think. What are some examples of the highest quality ad inventory, with the best earning potential?

Respectfully, we believe the premise of this question is inaccurate. Google does not take the position that when publishers earn less than they think from advertising, it must be because the quality of their ad inventory isn't as high as they think. The earning potential of a publisher's ad inventory depends on a variety of factors, including the size and location of the ad space relative to the publisher's web page or app, the volume and characteristics of users the publisher typically attracts, and user engagement with the web page or app, among others. For example, a banner ad at the top of ESPN.com or large news outlets such as nytimes.com or wsj.com is typically considered inventory with high earning potential.

i. Google's search and ad server site "tags" collect user data from thousands of websites. Is this data stored by Google and do Google's advertiser tools gain access to or benefit from this information?

Publishers using Google's sell-side advertising technology products embed in their pages pieces of HTML code that are referred to as ad tags (and also insert tags that correspond to the many other advertising technology products that publishers typically use simultaneously

with Google's products). Whenever a web page is visited, the user's web browser tries to load the content of that page. If the page uses Google's ad server, the HTML code in the page will contain an instruction to the user's browser to request a file from the Google sell-side advertising technology products, for example, Google Ad Manager. Ad requests typically include information about the user's IP address, the content of any cookies on the user's browser that are associated with the ad server's domain, and the URL of the page that issued the request ("Ad Request Data") and can be sent at the publisher's discretion to multiple different exchanges or platforms, not just Google. In response to such a request, Google Ad Manager can return an ad or record an event in its logs (e.g., the fact that a user arrived at this particular page, information that is valuable to its customers and stored in accordance with Google's Privacy Policy). Publishers control whether Google's advertiser tools such as Google Ads or DV360 are permitted to log user data related to the impression.

When Google Ad Manager is requested to conduct an auction for an impression, it typically includes key elements of that Ad Request Data in the bid requests it sends to eligible participants, including third-party bidders participating as Authorized Buyers (i.e., ad networks, trading desks, and DSPs), ad exchanges and ad networks participating in Google's Open Bidding service, and Google-owned bidders such as Google Ads and DV360. All participating bidders receive broadly the same information in their bid requests, including non-personally-identifiable information regarding the impression, the site or app on which the impression is located, the user, and the user's browser. Each bidder may then combine that information with its own data to calculate an appropriate bid.

ii. I have heard reports that companies are under pressure by Google to buy more ads and ad services from you than they normally would in order to qualify for various incentives.

Google does not pressure companies to buy more ads and ad services than they normally would in order to qualify for incentives. The fees associated with some Google advertising technology products can decrease as advertisers increase their advertising spend or publishers increase their sales volumes, thereby decreasing the overall cost of buying and selling advertising space when using Google services. Such fee structures are commonplace in the sale of online advertising, as they are in many industries, and are often demanded by Google's partners. How much a company ultimately spends on advertising through Google's advertising products is entirely up to them.

21. Does Google engage in any pressure tactics- such as incentive programs, ad placements, auction rigging or any other conduct- to facilitate ad purchases above and beyond what a given company may ordinarily spend?

Google does not pressure companies to buy more ads and ad services than they ordinarily would to qualify for incentives or otherwise. As discussed above, like many other service providers, Google offers certain fee structures, often in response to requests from Google's

partners, that can reduce overall cost as volumes and spend increases. Google respectfully disagrees that such structures are appropriately characterized as "pressure tactics."

22. Mr. Pichai, I am going to mention a Google product, for each one please describe in full detail what data that product collects from a user:

We've worked hard to ensure our Privacy Policy (https://policies.google.com/privacy) is accessible and easy to understand. For users with Google Accounts, they can use our Privacy Checkup Tool (https://myaccount.google.com/privacycheckup) to walk through their various settings and update what data Google collects, how long the data is stored, and whether they want to export or delete any data. As we note in our Privacy Policy, we collect information to provide better services to all our users—from users' preferred languages to what YouTube videos they may like. The information Google collects, and how that information is used, depends on how individuals use our services and manage their privacy controls.

Below, in response to your questions, we provide an overview of the types of information that may be collected but note that many factors, including users' settings, can alter what types of data are collected.

i. The Google Android smartphone operating system -

Google's Android operating system is an open-source platform that can be used in many products, including TVs, vehicles, and smartphones. Google does not always receive data from an Android device, depending on how it has been developed by other manufacturers and developers. For Android devices with Google apps, like Google Play Services, the device may periodically contact Google servers to provide information about the device and its connection to our services. This information includes information like device type, carrier name, crash reports, and which apps have been installed on the device. Depending on which Google apps are on the device, we may also collect other data, as described in our Privacy Policy (https://policies.google.com/privacy).

ii. The Chrome browser

Information regarding how Chrome handles users information is available at Chrome's privacy notice, available at https://www.google.com/intl/en/chrome/privacy/. Like all browsers, the basic browser mode for Chrome stores information locally on the user's device, including browsing history, personal information and passwords (if a user opts to save them to the browser), a list of permissions that they have granted to websites (like whether they've granted a food delivery website access to their location), cookies or data from websites visited, data saved by extensions, and a record of downloads. In addition, by default, Chrome sends usage statistics and crash reports to Google to help us improve our products.

Users may use Chrome with or without a Google Account. If a user signs in to the Chrome browser or a Chromebook and enables "sync with your Google Account," their personal

information is saved in their Google Account on Google's servers so they may access it when they sign in and sync to Chrome on other computers and devices. This personal information is subject to Google's Privacy Policy and can include browsing history, bookmarks, tabs, passwords and autofill information, and other browser settings, like installed extensions.

iii. Google Search

Users may use Google Search with or without a Google Account. What data might be collected is dependent upon the user's Google Account setting. On a given user's Google Account page (http://myaccount.google.com/), that user can view his or her activity (if he or she has opted in to having it stored), delete it manually, and/or choose to delete it automatically using the controls provided on that page. Users without a Google Account can choose whether or not their Search activity is used to offer more relevant Search results by visiting https://google.com/history/optout.

Search collects user activity including what users search for, the results they click, and the user's IP address (for example, for language identification and to aid in displaying local results). This information is used for things like improving a user's experiences by giving faster searches and more relevant results.

For more information about users' data in Search, users can visit: https://myactivity.google.com/privacyadvisor/search?pli=1.

iv. DoubleClick

DoubleClick is no longer used as a product name by Google, but in the past was used to refer to multiple advertising products we offer to online marketers and publishers. In general, like many other companies with competing services, Google collects information from user's interaction with these services when they are visiting the sites and apps of those marketers and publishers. This includes information about each ad impression or ad click, basic information about the user, including IP address, a unique cookie or device identifier, and the time and URL of the event. We collect this information for the purposes we list in our Privacy Policy, and in particular in order to personalize advertising (if permitted by the user's settings), to provide aggregated reports to advertisers and publishers, and to combat fraud and abuse.

v. YouTube viewing and search history

Users may use YouTube with or without a Google Account. Depending on a user's settings, YouTube may retain information about the user's watch history and queries from their search history. To help users with a Google account control this information, we created "Your data in YouTube," available at https://myaccount.google.com/yourdata/youtube, a feature designed to makes it easy for user to understand and control what data is saved and how it is used on YouTube and across Google. For example, users can remove specific videos from their watch

history and specific queries from your search history, pause their watch and search history, and/or delete their entire watch and search history.

vi. Google Analytics

Google Analytics collects data related to a user's device or browser, IP address, and activity on sites or apps owned by our customers in order to measure and report statistics about user interactions on those sites or apps on behalf of those customers. We offer a number of tools to Google Analytics customers to allow them to control the data we collect about their users, including IP masking and data retention controls, and user data deletion.

23. Earlier this year, Google announced that the Chrome browser would phase out third-party browser cookies. These so-called third-party cookies are how ad tech competitors and independent web sites understand consumer behavior. How are these competing browser cookies any different than Google's own tracking devices?

As we discuss in response to Question No. 14, our announcement to phase out third-party cookies is part of an industry-wide movement away from these tools.   When Chrome stops accepting third-party cookies, it will treat Google third-party cookies the same way it treats all other third-party cookies.

It's important to understand that third-party cookies are just one way for advertisers to understand consumer behavior. Advertisers also can make use of data obtained through a first-party relationship that an ad tech provider may have with consumers—such as Amazon's extensive data on its users' shopping habits—or through third-party services that do not rely on cookies.

Additionally, even with these changes, website publishers can continue to use first-party cookies to understand its relationship with its users as it always has.

i. Will Google's changes to Chrome have similar impacts on Google's and its rivals' data collection capabilities?

ii. What data will Google collect from Chrome that will no longer be available to Google competitors?

As explained in more detail above, the changes to Chrome will apply equally to all companies that currently rely on third-party cookies, including Google.

iii. Does Google treat different streams of consumer data differently? For instance, how many types of consumers' data are incorporated into Google's adtech products to generate audiences?

We have strict policies on what types of advertisements can be placed through Google and how users may be targeted. Advertisers are not allowed to use sensitive interest categories to target ads to users or to promote advertisers' products or services, including targeting users

based on personal hardships, their identity, beliefs, or sexuality. We also have policies to ensure that ads promoting access to opportunities, like housing and jobs, cannot be targeted to users based on social biases like race or gender.

iv. Are any types of consumer data more valuable to advertisers or Google?

Yes, Google's understanding is that advertisers value different types of consumer data differently depending on a variety of factors, including the goal the advertiser is trying to achieve or the product or service they offer. For example, an advertiser conducting a direct response campaign may value information about whether the user has visited their website before more than an advertiser that wants to increase their brand recognition. Google wants to help advertisers deliver more relevant ads and therefore strives to provide advertisers with targeting options that meet all of their needs, consistent with Google's policies regarding sensitive interest categories or personal characteristics as described in response to Question No. 23(iii).

v. How does Google's advertising pricing change based on various types of consumer data?

Google does not set the prices of ad inventory on its owned and operated properties based on consumer data. Instead, Google sells that inventory largely through an auction format. The price of that inventory depends on the result of those auctions and relative advertiser demand.

24. Google just announced an investment into home security provider ADT. Google currently has a substantial position in the connected home market with the Nest line of products. What will the market share be of the combined Google-Nest-ADT collaboration?

i. Will Google collect, process, analyze, or store data from currently installed ADT devices?
ii. How about future devices?
iii. How will Google integrate ADT data into its advertising technology?

Our mission for smart home products is to build devices and services that allow a user's home to take care of the people inside it and the world around it. We are committed to giving users transparency, choice, and control over their data in our products and services, and our partnership with ADT is no different. We have committed that, for our Nest home products, video footage, audio recordings, and home environment sensor readings are not used in advertising or for ad personalization. When a user interacts with the Assistant, we may use those interactions for ad personalization. For example, if a user asks, "Hey Google, what's the weather today?" we may use the text of that voice interaction (but not the audio recording itself) to show personalized ads. Of course, users can always review their Google settings to control the ads they see, including opting out of ad personalization completely. Learn more

about the Google Assistant and the choices available at https://support.google.com/accounts/answer/2662856 and https://myaccount.google.com/yourdata/assistant?pli=1.

Google has also 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.

Written Questions for the Record from the Honorable Ken Buck
Questions for Jeff Bezos, Tim Cook, and Sundar Pichai

1. Do you employ end to end encryption for communications on your products in China?

2. Do you provide user enabled and controlled encryption on the communications devices you sell in China?

Because the answers to these questions are related, we have grouped together our responses to Question Nos. 1 and 2. We are conscious of our responsibility to safeguard user data, and our presence in Mainland China today is very limited and carefully scoped. We do not offer our communications products like Gmail or YouTube in Mainland China, and we do not have any data centers in Mainland China. We also do not offer our Pixel phone in Mainland China.

3. Do you provide China and the Chinese Communist Party access to users' information and content as required by Chinese law?

4. What user information or content do you provide the Chinese government under Chinese law?

Because the answers to these questions are related, we have grouped together our responses to Question Nos. 3 and 4. We do not produce users' information or content to the authorities in Mainland China, and instead suggest they invoke diplomatic procedures with the U.S. government, like a mutual legal assistance treaty (MLAT). The only exceptions are in the very limited circumstances when non-content user data is needed immediately to prevent death or serious physical injury or for information about advertisers who purchase services through the Shanghai subsidiary. We provide information about government requests to produce data, including requests from the Chinese government, in our transparency report found here: https://transparencyreport.google.com/user-data/overview?hl=en

5. If you deploy Artificial Intelligence to identify illegal content consistent with Chinese law:

  ○ **What data points does your AI examine?**

We know that how AI is developed and used will have a profound impact on society. As a leader in AI, we know we have to get this right. Along those lines, in 2018 Google announced a

set of AI Principles that govern how we develop and deploy AI technology. In these AI Principles, which we use to assess AI applications globally, we outline AI applications we will not pursue, including AI technologies that gather or use information for surveillance in violation of internationally accepted norms, and AI technologies whose purpose contravenes widely accepted principles of international law and human rights. For more information, please see https://ai.google/principles/.

Because we do not offer services like YouTube or Search in Mainland China, we do not use AI to identify such content in China.

- ○ **How is your AI trained to identify and keep up with the changing language, vocabulary and codes used by pedophiles and other criminals?**

Google has long been a leader in the battle against child sexual abuse material (CSAM). In 2018, we introduced a tool that leveraged cutting-edge artificial intelligence (AI) to improve how service providers, NGOs, and other technology companies review content at scale. Using our Content Safety API, we can assist reviewers sorting through many images by prioritizing the most likely CSAM content for review. Previous tools focused on matching images against hashes of known CSAM; our tool is able to keep up with offenders by also targeting content that has not been previously confirmed as CSAM. Quick identification of new images means that children who are being sexually abused today are much more likely to be identified and protected from further abuse. Our work has been praised by the Internet Watch Foundation, among others. For more information, see our blog at https://www.blog.google/around-the-globe/google-europe/using-ai-help-organizations-detect-and-report-child-sexual-abuse-material-online/.

We are dedicated to this fight and will continue to develop AI to battle these types of activities on our platform, and to support other companies in this fight as well.

6. Does China require you to submit either your encryption of AI algorithms to Chinese authorities for technical evaluation before you are permitted to deploy them in China?

We do not share the encryption of our AI algorithms with authorities in China for technical evaluation.

7. Does China require providers to back up the contents of all devices into the either the company's data center or a government data center in China?

8. Does China require information on any or all of your devices that access the Chinese cellular telephone infrastructure or Internet to backup their content and user information in Chinese datacenters? Does this apply to tourists and business travelers, to include United States citizens?

Because the answers to these questions are related, we have grouped together our responses to Question Nos. 7 and 8. We are neither aware of any such requirements, nor are we storing

data as described in the questions. Indeed, we have no data centers in Mainland China and we do not offer our main consumer products, including Google Search, Gmail, Google Drive, Google Play, and YouTube in Mainland China. As noted above, we also do not offer our Pixel phone in Mainland China. As we discussed in response to Question No. 4, any requests for access to user data from Mainland China on our services like Gmail, YouTube, and Search, regardless of the location of the user, would be required to go through the MLAT process except in the very limited circumstances when the data is needed immediately to prevent death or serious physical injury or for information about advertisers who purchase services through the Shanghai subsidiary. We provide information about government requests to produce data, including requests from the Chinese government, in our transparency report found here: https://transparencyreport.google.com/user-data/overview?hl=en.

Written Questions for the Record from the Honorable James Sensenbrenner

1. The Certificate Authority/Browser Forum (CA/B Forum) is an industry body that collaborates on the "best practices" baseline requirements that govern Certificate Authorities (CA) and the issuance of public-facing digital certificates. Browsers participate in the CA/B Forum but, in practice, create their own rules. They have all the power and can unilaterally make changes to internet security through their root store policies.

a. Why is there no federal oversight of the backbone of internet security?

b. Why should Google (or any single company) be able to do anything they deem appropriate just because they have dominant share in the browser market?

c. What role do the people who are impacted (i.e., anyone with a website) have in this process of rulemaking?

d. Can Google confirm that the policies that it recommends and promotes in the CA/B Forum are purely designed to accomplish security outcomes or does Google use the CA/B Forum as a tool to enforce technology changes that benefit Google's business at the expense of security professionals and their ability to practically manage their infrastructure?

Safeguarding user security is an obligation we take very seriously and in which we invest considerable technical resources.   Every software vendor, including Google, is responsible for the security of their own products, and designing secure products often requires balancing security, interoperability, and stability. Digital certificate technology was specifically designed to allow this kind of interoperable flexibility on the internet.

To enable the secure, encrypted transfer of data, like credit card information or credentials, web browsers have historically used SSL/TLS, which was originally developed by Netscape

Corporation for the Netscape browser. To establish an SSL/TLS connection, a site provides a digital certificate to the application contacting it, which establishes that the site is who it says. Sites obtain digital certificates from Certification Authorities (CAs) that have been certified by the application to work with and comply with the security policies of that application.

To promote interoperability among different competing products, both between different CAs and between different browsers, the CA/Browser Forum (CA/B Forum) was created. At the time of the CA/B Forum's creation, there was no consistent way for a single vendor, such as a browser, to obtain independent evaluation of different CAs, and there were very large differences in the quality, consistency, and reliability of digital certificates produced by different CAs. Each browser needed to audit and evaluate each CA, as they would any other partnership or product integration. Similarly, each CA needed to carefully evaluate all of a particular browser's product and security requirements, to ensure their certificate issuing process complied.

The Baseline Requirements were developed to provide a minimum, consistent, and interoperable standard for certificates used by browsers, and which browsers could voluntarily adopt. By producing a common minimum baseline, rather than best practices, this further enabled the development of a common set of auditable criteria against those requirements. The most popular widely accepted criteria, the WebTrust criteria developed by AICPA and CPA Canada, were modeled after the System and Organization Controls (SOC) approach from AICPA, which is used to help vendors evaluate their suppliers and service providers. The WebTrust criteria reflect that the certification authority is acting as a service provider for the browser vendor, and thus can affect the safety, security, and reliability of that browser vendor's product.

This development of common audit criteria allowed for CAs to obtain a single audit, rather than separate audits per vendor, and provide that single result to multiple different vendors to demonstrate compliance with common requirements. For CAs, this reduced the cost and complexity of audits. For vendors, such as browser and operating system vendors, the use of common criteria and third-party audits allowed them to rely on third-parties to assess common criteria, and to instead focus on their specific needs and requirements above and beyond those common criteria. Although an important component, they are only part of the evaluation that a browser vendor does before partnering with a certification authority as part of their due diligence into any business relationship.

Website operators, like browser vendors, are consumers of the services that CAs provide. They are therefore important stakeholders in identifying features that are important to them, including security of the issuance process and ease of use and administration. When a CA misissues certificates, then the website operator may be involved in a process like the one described in Question No. 3 in which browser vendors and website operators determine the best path for protecting user security while minimizing disruption.

Google only makes decisions about the certificates that will be trusted by Google products. The security of Google's products is an important reason that users choose to use those products. Other browser vendors can and do make different decisions.

The policies that Google recommends in the CA/B Forum are designed to accomplish security outcomes. In general, Google promotes policies that will increase the strength and ubiquity of encrypted connections on the web. This means we want certificates to be technically strong, as well as easy to issue, deploy, and replace. This benefits users because it makes it more likely that websites will opt to use encrypted connections, and it benefits website operators who can more easily and regularly switch to a CA that may offer a better product. We would be happy to engage with Congress on these issues.

2. Should Google be allowed to set certification rules directly or indirectly (e.g., through Mozilla, where Google is a primary funding source) and also *compete* as a certificate authority either through its own certificate authority or by funding other certificate authorities?

As discussed above, Google does not set policies for certificates other than in determining which certificates Google's own products will trust. Website operators are free to select any CA that best meets their needs and other browser vendors make independent decisions about which certificates to trust. In many cases, browser vendors may reach the same conclusion about trust because they're each considering the same facts and acting out of concern for the security of their users.

Google does participate in standards development bodies like the CA/B Forum, but the CA/B Forum's Baseline Requirements are developed by both CAs *and* browsers, each of which has an interest in interoperable and consistent minimum standards for the management of CAs and issuance of SSL certificates. The Baseline Requirements benefit CA service providers because they have a clearer understanding of the standards they need to adhere to when providing SSL and authentication services. Consumers benefit because they are assured of a certain level of security when they encounter SSL certificates offered by CAs that have met the best practices described in the Baseline Requirements.

Google is invested in creating a more secure internet and empowering other software vendors to make informed decisions about security. One example of Google's initiatives to improve the security of the entire certificate ecosystem is Certificate Transparency (https://www.certificate-transparency.org/), a distributed multi-stakeholder system relied on by multiple browsers and platforms to publicly monitor and audit certificates. Specifically, Certificate Transparency makes it possible for browsers, CAs, website owners, and the general public to detect unauthorized or incorrectly issued SSL certificates, whether issued mistakenly or maliciously. This in turn protects users from having their security or privacy compromised by the use of these certificates. To date, there have been over 10 billion entries made to the set of Certificate Transparency logs that Google and other browsers monitor. Overall, Certificate Transparency has been widely successful at strengthening the certificate

ecosystem, and the Cybersecurity and Infrastructure Security Agency requires federal agencies to monitor Certificate Transparency logs for unauthorized certificates. For more information, please see CISA's January 22, 2019 Emergency Directive 19-01, "Mitigate DNS Infrastructure Tampering." (https://cyber.dhs.gov/assets/report/ed-19-01.pdf.)

Because it is an open and public framework, anyone can build or access the basic components that drive Certificate Transparency. This is particularly beneficial to Internet security stakeholders, such as domain owners, certificate authorities, and browser manufacturers, who have a vested interest in maintaining the health and integrity of the SSL certificate system.

The Certificate Transparency framework also lets CAs monitor the operation and behavior of other CAs. This oversight capability helps drive better adherence to standard practices across the industry, and it helps lessen the impact of missteps on the entire Internet. By opening the SSL certificate system to near real-time scrutiny, mistakes and malicious behavior are difficult (if not impossible) to hide.

3. I've become aware that Google and other browsers periodically decide to remove trust from certificates for reasons that may not be very clear. How would you propose to make the certificate trust revocation process more sensible and transparent?

When we learn that a Certification Authority has operated in an untrustworthy manner, such as by repeatedly incorrectly issuing certificates or otherwise violating Chrome's policies and public expectations of CA security, it may merit removing trust from that CA. In those cases, we must balance the security risk to our users with minimizing disruption to the ecosystem. In these situations, Google's first obligation is to protect the security of our users and our products, and there is generally no way to avoid disruption completely. However, we do our best to provide public notice to website operators who will be affected, in a forum where we can hear feedback from those website operators and the general public.

A recent example of this process is when Chrome removed trust in Symantec's CA in 2017. In that case, Google learned about a security incident with Symantec's CA that involved incorrectly issued certificates for major web properties, and began investigating in mid-January. After investigating this incident, and taking into account Symantec's history of compliance and security issues with certificate issuance, we were confident that trust in Symantec's CA represented an ongoing threat to the security of Chrome users. As a result, we announced in March, in a public discussion forum (see https://groups.google.com/a/chromium.org/g/blink-dev/c/eUAKwjihhBs/m/El1mH8S6AwAJ?pli=1), that we intended to stop trusting Symantec certificates in August of 2017, and described the rationale for that decision.

Because we knew this decision would affect many web ecosystem participants, we decided to also use our standard process (available at https://www.chromium.org/blink#new-features) for previewing upcoming changes to the web platform, to describe our concerns and initial plans. This allowed us to gather feedback from website operators, the Chromium community, other browsers (see, for example, MozillaWiki, "CA:Symantec Issues," https://wiki.mozilla.org/CA:Symantec_Issues), and the broader ecosystem about how to balance interoperability and

compatibility risks. As a result of that feedback, Google adapted our final plan (available at https://groups.google.com/a/chromium.org/g/blink-dev/c/eUAKwjihhBs/m/El1mH8S6AwAJ) to delay the date Chrome would no longer trust Symantec certificates by roughly 8 months, to April 2018.

It is always possible to improve on complex processes like these. However, removal events like this are uncommon, usually representing severe systemic failures of a third party, and the best process for each one may vary depending on the circumstances. Overall, our goal during these scenarios is to balance risk by designing unambiguous and interoperable solutions that minimize disruption, and provide as much transparency as feasible into the decision making process. In the end, Google's core responsibility is to make product decisions that best protect the interests of Chrome users, while doing our best to minimize the impact on website operators.