



**Duck Duck Go, Inc.**  
20 Paoli Pike • Paoli, Pennsylvania 19301  
United States  
+1 267.690.7758 • duckduckgo.com

April 14, 2021

Australian Competition & Consumer Commission (ACCC)  
23 Marcus Clarke Street  
Canberra, Australian Capital Territory 2601  
Australia

[digitalmonitoring@acc.gov.au](mailto:digitalmonitoring@acc.gov.au)

**DuckDuckGo’s comments regarding the ACCC’s upcoming report on market dynamics and consumer choice screens in search services and web browsers**

DuckDuckGo is a privacy technology company. We believe that privacy is a human right and that getting privacy online should be simple and accessible to everyone. Every day, millions of people rely on our free all-in-one solution to stay private online. With one download of the DuckDuckGo Privacy Browser for mobile or the Privacy Essentials browser extension for desktop, we offer seamless protection to our users. This includes our tracker blocking technology and our private search engine. Established in 2008, we have been robustly profitable since 2014 as a result of revenue generated from contextual search advertising, which is based on the context of a page you are viewing, as opposed to behavioral advertising, which is based on detailed profiling about you as a person.<sup>1</sup>

We commend the ACCC for undertaking its internationally influential work in this area. We are pleased to provide comments in enthusiastic support for the ACCC’s work in on choice screens (which we refer to as *preference menus*) for search engine selection. It is unfortunate, but not surprising, that Google decided to completely ignore the ACCC’s robust nudge in its 2019 Digital Platforms Inquiry Final Report: “If Google does not introduce similar options [like the EU Android preference menu] for Australian Android users by six months from the date of the Report [deadline was January 26, 2020], the ACCC will submit to the Government that it should consider compelling Google to offer this choice.”

The ACCC’s Issues Paper on this subject is both broad and deep. We have spent substantial time ourselves thinking about a search preference menu. As such, we submit the following documents, which are responsive to most of your questions for market participants:

---

<sup>1</sup> Gabriel Weinberg, *What if We All Just Sold Non-Creepy Advertising?*, N.Y.TIMES (June 19, 2019), <https://www.nytimes.com/2019/06/19/opinion/facebook-google-privacy.html>.



1. DuckDuckGo’s Blog Posts on the Search Preference Menu, as follows.<sup>2</sup>
  - a. Search Preference Menu Immediately Increases Google Competitors’ Market Share by 300-800% (Oct. 30, 2019).
  - b. Search Preference Menus: Improving Choice With Design (Jan. 28, 2020).
  - c. Search Preference Menus: No Auctions Please (Mar. 10, 2020).
  - d. Search Preference Menus: Google Auction Ignores Screen Size and Scrolling (May 20, 2020).
  - e. Google Search Mobile Market Share Likely to Drop Around 20% through Search Preference Menus (Aug. 10, 2020).
  - f. As Predicted, Google’s Search Preference Menu Eliminates DuckDuckGo (Sept. 28, 2020).
  - g. Dear Google: We Agree Search Competition Should Be “Only 1 Click Away”—So Why Is It 15+ on Android? (Oct. 14, 2020).
  - h. Open Letter to European Commission: Request for Trilateral Meeting among Google, the EC, and Alternative Search Engines to Improve Search Preference Menu (Oct. 27, 2020).
2. DuckDuckGo Highlights.
3. DuckDuckGo’s White Paper on the Search Engine Market: Features and Competitive Landscape.
4. Ciara O’Brien, *Smartphones share our data every four and a half minutes, says study*, The Irish Times (March 27, 2021).

---

<sup>2</sup> We included eight blog posts in this submission. However, our blog lists 10 posts on the preference menu because two of those posts are translations of the Trilateral Meeting Request post (*Open Letter to the European Commission: Request for Trilateral Meeting among Google, the EC, and Alternative Search Engines to Improve Search Preference Menu*, DUCKDUCKGO (Oct. 27, 2020), <https://spreadprivacy.com/trilateral-search-meeting/>).



5. *Most Browser Tracking Protection Doesn't Actually Stop Tracking by Default, but We Can Help*, DuckDuckGo (March 30, 2021).
6. DuckDuckGo's Suggested Questions for Google regarding the EU Preference Menu.
7. DuckDuckGo's position paper on the EU Digital Markets Act.
8. DuckDuckGo's Suggested Questions for the US House Judiciary Antitrust Subcommittee in advance of the October 1, 2020 hearing entitled *Proposals to Strengthen the Antitrust Laws and Restore Competition Online*.
9. DuckDuckGo's proposal to the US Federal Trade Commission's *Bringing Dark Patterns to Light* Workshop.
10. *Choice Screen Auctions* by Michael Ostrovsky.
11. DuckDuckGo's Comments on the UK CMA Market Study Interim Report: Online Platforms and Digital Advertising.

We have the following additional notes for the ACCC in response to the questions raised in the Issues Paper and based on our experience with Google's preference menu in the EU.

- Google should be required to update software code in the Android operating system such that users are able to obtain the preference menu outcomes by navigating to a search engine website OR by downloading a search engine app, provided that such website/app triggered its own code to prompt users (e.g., a popup box and one-click consent).
  - In other words, Google should establish functionality such that a search engine can assist users in triggering the preference menu (or its outcomes) with one click, rather than forcing users to erase their device in order to see the preference menu again.
  - The way this would work is that, when a user visits [www.duckduckgo.com](http://www.duckduckgo.com) or downloads the DuckDuckGo extension or app, we can assist the user—in one click—to change their defaults and search widget, as if they were seeing the preference menu for the first time.
- Google should be banned from automatically placing a Google Search widget on the user's Android device when a user deletes a non-Google home screen search widget installed via preference menu.

- Google should display the preference menu on a quarterly basis to users post-activation.
- The preference menu should be displayed on both existing and new devices.
- Transparency is key for evaluating the success or failure of a preference menu. Accordingly, Google should be required to provide a dashboard that reports on preference menu triggering and on search engine selections via the preference menu. Google has an online console in which Google Play app developers can view live updates on the number of times their app is displayed and downloaded. A similar dashboard or online console should be required as part of a preference menu obligation.
  - Google should publicly disclose how often the preference menu is shown to users (day, week, or month).
  - Google should be required to regularly report to the search engines on the preference menu the number of selections for each search engine. At a minimum, Google should be required to publicly disclose the total number of times that Google and non-Google search engines (as a whole) are selected in the preference menu.
  - Google should provide to search engines on the preference menu the following real-time metrics in aggregate numbers:
    - when a user deletes the selected search engine's app;
    - when a user changes their search engine in Chrome from the selected search engine; and
    - when a user removes the selected search engine's search widget.
- StatCounter, which creates market share reports by measuring who visits publisher sites across all devices, dramatically undercounts DuckDuckGo's market share because we block its trackers in our mobile app and desktop extension to protect user privacy. Our White Paper on the Search Engine Market (attached to this submission) expands on this issue.
- The preference menu should be required on Pixel phones. (Pixel is owned by Google, but that is not self-evident to consumers.) Pixel phones were not included in the European Commission's 2018 Android decision.



We applaud the ACCC's examination of market dynamics and preference menus in search services and web browsers. Thank you for this opportunity to respond to the ACCC's Digital Platform Inquiry Issues Paper.

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Search Preference Menu Immediately Increases Google Competitors' Market Share by 300-800%

FILED UNDER PRIVACY RESEARCH ON 30 OCT 2019



## New research shows pent-up consumer demand for search alternatives.

This is the first in a [series](#) of posts about search preference menus.

A search preference menu — one that changes all search defaults and includes most common Google alternatives — can deliver meaningful search engine choice to consumers and significantly increase competition in the search market.

A search preference menu recently [shifted Android market share in Russia](#), and we wanted to see what could happen in the US, [Europe](#), and [Australia](#). So, we conducted research to find out.

We presented people with the preference menu depicted below (Google's initial "4-choice screen" Android proposal). It lists the top four mobile search engines in these regions (Google, Bing, Yahoo, and DuckDuckGo). We also presented people with an 8-choice variation based on the same design. (This preference menu design is flawed and restrains user choice; we nonetheless used this design for research purposes because it is what Google intended to use.)

12:30

🔍

**Choose your search provider**

The choice you make below will determine the default in a search box on your home screen and in Google Chrome. If you don't have the provider's app, it will be downloaded from Google Play.

Bing

Google

DuckDuckGo

Yahoo

Next

<

12:30

🔍

**Choose your search provider**

The choice you make below will determine the default in a search box on your home screen and in Google Chrome. If you don't have the provider's app, it will be downloaded from Google Play.

Bing

Google

DuckDuckGo

Yahoo

Ecosia

Qwant

Yandex

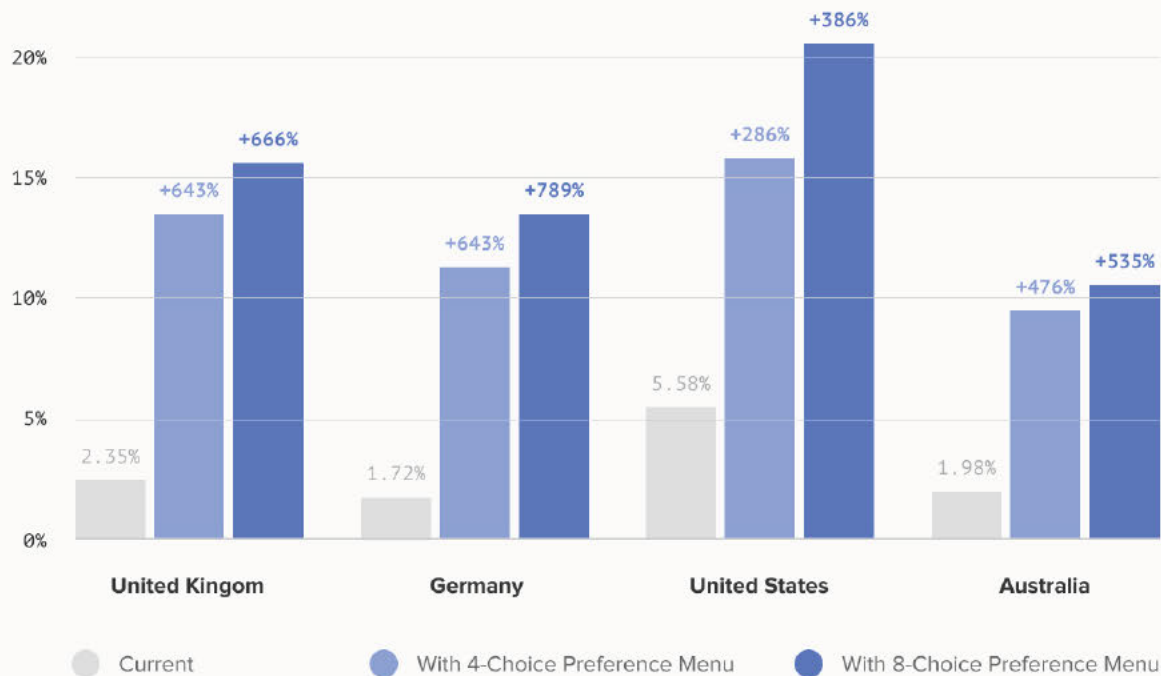
Baidu

Next

<

We found that in each surveyed country, people select the Google alternatives at a rate that could increase their collective mobile market share by 300%-800%, with overall mobile search market share immediately changing by over 10%. (Of course, this is dependent on which search engines are on the search preference menu.)

## Mobile Search Engine Market Share (Excluding Google) with Search Preference Menus



 DuckDuckGo

Survey of 3,411 adults in the U.S., U.K., Germany, and Australia (Sep-Oct 2019)

And, this could just be the start. Because people would finally be able to easily change their Android search defaults, and as people become familiar with search engine alternatives, we expect even greater market share changes as time goes on. Today, many users don't realize they can switch search providers, and those who do attempt to change their Android search defaults face obstacles like hard-to-change homescreen search widgets. Google's pervasiveness in search is difficult to dissipate; the company has many levers that exert magnetic forces, pulling people into its search engine. As a result, a preference menu is just one part of an effective remedy.

Additionally, this increased market share change could be negatively impacted in many ways. For example, if the preference menu is only distributed to new devices, then we expect market share changes to be frustratingly slow. Also other Android features (like Google Assistant), use of other Google products (like Gmail), coupled with Google prompts to users (such as pop-up boxes), could draw people back to using Google search. Finally, research has shown that people rate the same set of search results better when Google's logo is attached to it. For all these reasons,



people often need time and repeated uses of non-Google search engines before consistent adoption.

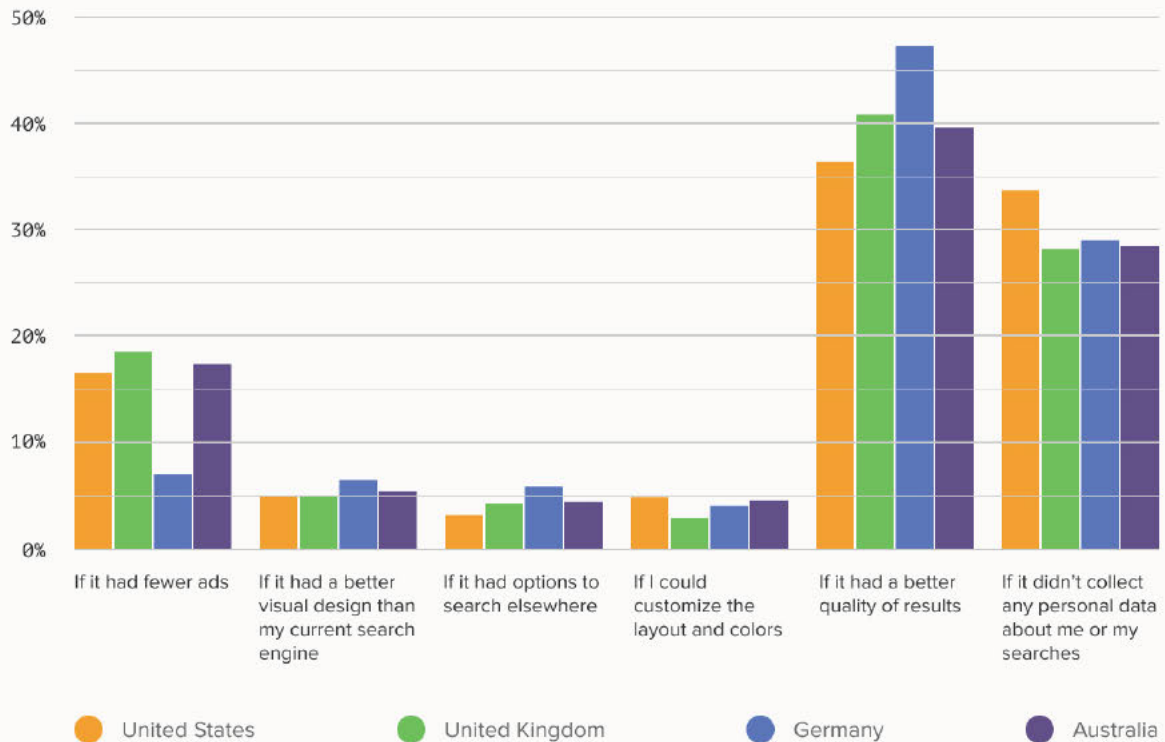
When we presented people with the longer list of search engines, those people selected more non-Google search engines. In other words, more choice means more diverse market share.

In each screen variation that we tested, DuckDuckGo was the #2 selected search engine. We believe this underscores the pent-up consumer demand for a truly private search option. (Of course, to satisfy that demand, a private search option must be on the preference menu.)

To gauge why consumers might select an alternative search engine, we asked people the following question:

*A search engine is a web tool in which you enter search terms and receive a list of results from varying websites. Examples include Google.com, Yahoo.com, and Bing.com If you were going to switch to a new search engine, which factor would most motivate you to make the switch? (Or, if you have already switched search engines, what was the primary factor that motivated the switch?)*

## Which factor would motivate you to switch search engines?



 DuckDuckGo

Survey of 3,411 adults in the U.S., U.K., Germany, and Australia (Sep-Oct 2019)

The #1 reason was "If it had a better quality of results", closely followed by "If it didn't collect any personal data about me or my searches", providing more evidence that many consumers would like a truly private search option.

Below is some of the raw data, followed by the underlying methodology. Overall, this data shows strong pent-up consumer demand for search alternatives to Google, but competitors' market share is suppressed by difficulties that users face in changing their search defaults.

### Raw Data

FACTOR	UNITED STATES	UNITED KINGDOM	GERMANY	A
If it had a better quality of results	36.3% (± 2.74)	40.72% (± 3.28)	47.16% (± 5.35)	3
<b>If it didn't collect any personal data about me or my searches</b>	<b>33.67% (± 2.7)</b>	<b>28.19% (± 3.00)</b>	<b>28.96% (± 4.86)</b>	<b>2</b>
If it had fewer ads	16.62% (± 2.13)	18.56% (± 2.60)	7.16% (± 2.76)	1
If it had options to search elsewhere	3.31% (± 1.02)	4.41% (± 1.37)	5.97% (± 2.54)	4
If it had a better visual design than my current search engine	5.09% (± 1.25)	5.1% (± 1.47)	6.57% (± 2.65)	5
If I could customize the layout and colors	5.00% (± 1.24)	3.02% (± 1.14)	4.18% (± 2.14)	4

### *United Kingdom*

SEARCH ENGINE	<u>CURRENT MOBILE MARKET SHARE</u>	MOBILE MARKET SHARE WITH PREFERENCE MENU	% CHANGE	BRAND AWARENESS
<b>Total Competition</b>	<b>2.09%</b>	<b>13.43%</b>	<b>+643%</b>	n/a
Google	97.62%	86.57% (± 2.89)	-11%	96.64% (± 1.2)
Yahoo	1.05%	4.29% (± 1.72)	+409%	92.23% (± 1.7)
Bing	0.55%	3.36% (± 1.53)	+611%	82.37% (± 2.5)
DuckDuckGo	0.49%	5.78% (± 1.98)	+1,180%	21.00% (± 2.7)

SEARCH ENGINE	<u>CURRENT MOBILE MARKET SHARE</u>	MOBILE MARKET SHARE WITH PREFERENCE MENU	% CHANGE	BRAND AWARENESS
<b>Total Competition</b>	<b>2.35%</b>	<b>15.66%</b>	<b>+666%</b>	n/a
Google	97.62%	84.33% (± 3.08)	-14%	96.64% (± 1.2)
Yahoo	1.05%	3.73% (± 1.6)	+355%	92.23% (± 1.7)
Bing	0.55%	3.54% (± 1.57)	+644%	82.37% (± 2.5)
DuckDuckGo	0.49%	4.85% (± 1.82)	+990%	21.00% (± 2.7)
Ecosia	0.21%	2.24% (± 1.25)	+1,067%	7.77% (± 1.79)
Yandex	0.01%	0.37% (± 0.52)	n/a	4.41% (± 1.37)
Qwant	0.00%	0.37% (± 0.52)	n/a	1.74% (± 0.87)
Baidu	0.04%	0.56% (± 0.63)	n/a	6.38% (± 1.63)

### *United States*

SEARCH ENGINE	<u>CURRENT MOBILE MARKET SHARE</u>	MOBILE MARKET SHARE WITH PREFERENCE MENU	% CHANGE	BRAND AWAREN
<b>Total Competition</b>	<b>5.58%</b>	<b>15.95%</b>	<b>+286%</b>	n/a
Google	94.26%	84.04% ( $\pm 2.85$ )	-11%	96.44% ( $\pm 1.0$ )
Yahoo	2.73%	3.79% ( $\pm 1.49$ )	+139%	92.88% ( $\pm 1.4$ )
Bing	1.71%	4.74% ( $\pm 1.66$ )	+277%	86.60% ( $\pm 1.9$ )
DuckDuckGo	1.14%	7.42% ( $\pm 2.04$ )	+651%	28.67% ( $\pm 2.5$ )

### *Australia*

SEARCH ENGINE	<u>CURRENT MOBILE MARKET SHARE</u>	MOBILE MARKET SHARE WITH PREFERENCE MENU	% CHANGE	BRAND AWAREN
<b>Total Competition</b>	<b>1.98%</b>	<b>9.43%</b>	<b>+476%</b>	n/a
Google	97.95%	90.56% ( $\pm 2.33$ )	-8%	96.14% ( $\pm 1.17$ )
Yahoo	0.73%	2.81% ( $\pm 1.32$ )	+384%	88.12% ( $\pm 1.97$ )
Bing	0.48%	2.15% ( $\pm 1.16$ )	+446%	77.10% ( $\pm 2.56$ )
DuckDuckGo	0.57%	4.47% ( $\pm 1.65$ )	+784%	15.27% ( $\pm 2.19$ )

### *Germany*

SEARCH ENGINE	<u>CURRENT MOBILE MARKET SHARE</u>	MOBILE MARKET SHARE WITH PREFERENCE MENU	% CHANGE	BRAND AWAREN
<b>Total Competition</b>	<b>1.72%</b>	<b>13.57%</b>	<b>+789%</b>	n/a
Google	98.24%	80.85% (± 5.03)	-18%	94.93% (± 2.3)
Yahoo	0.32%	3.4% (± 2.32)	+1,063%	77.31% (± 4.4)
Bing	0.44%	2.98% (± 2.17)	+677%	67.76% (± 5.0)
DuckDuckGo	0.37%	5.96% (± 3.03)	+1,610%	28.96% (± 4.8)
Ecosia	0.45%	4.26% (± 2.58)	+946%	13.73% (± 3.6)
Yandex	0.12%	1.28% (± 1.44)	+1,066%	7.76% (± 2.87)
Qwant	0.01%	0.85% (± 1.17)	n/a	4.18% (± 2.14)
Baidu	0.01%	0.43% (± 0.83)	n/a	11.34% (± 3.4)

## Methodology

These results are based on surveys via [SurveyMonkey's "Audience" platform](#), which ensures the demographic make-up of respondents is representative of the respective national population. Survey respondents were paid and a confidence level of 95% was used for calculating the values above. Answers were randomized.

- An October 2019 survey of 1,179 adults (18+) in the U.S.
- A September 2019 survey of 862 adults (18+) in the U.K.
- A September 2019 survey of 335 adults (18+) in Germany.
- An October 2019 survey of 1,035 adults (18+) in Australia.

Relevant survey questions not quoted above:

- I. "Brand Awareness" was measured with this question: "Which of the following brands have you heard of? (Select all that apply.)"

2. The preference menus were measured with this question: "Please read the screen carefully and select which search provider you would choose."

We included other questions in our surveys. If you'd like to discuss our research results, please [reach out](#).

For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).



## DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy newsletters.

- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or  
associated with anonymous searches.

— Spread Privacy —

Privacy Research

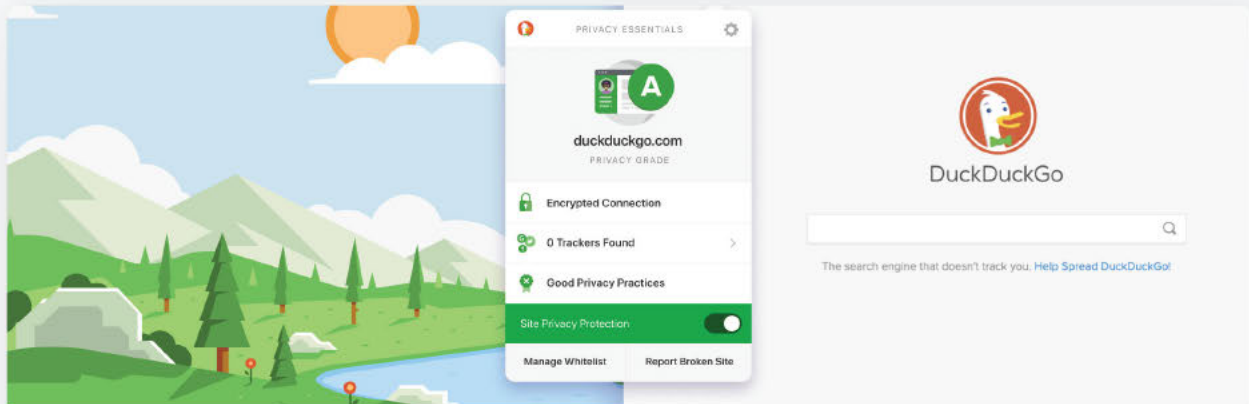


Most Browser Tracking Protection Doesn't Actually Stop Tracking by Default, but We Can Help

As Predicted, Google's Search Preference Menu Eliminates DuckDuckGo

Google Search Mobile Market Share Likely to Drop Around 20% through Search Preference Menus

See all 17 posts →



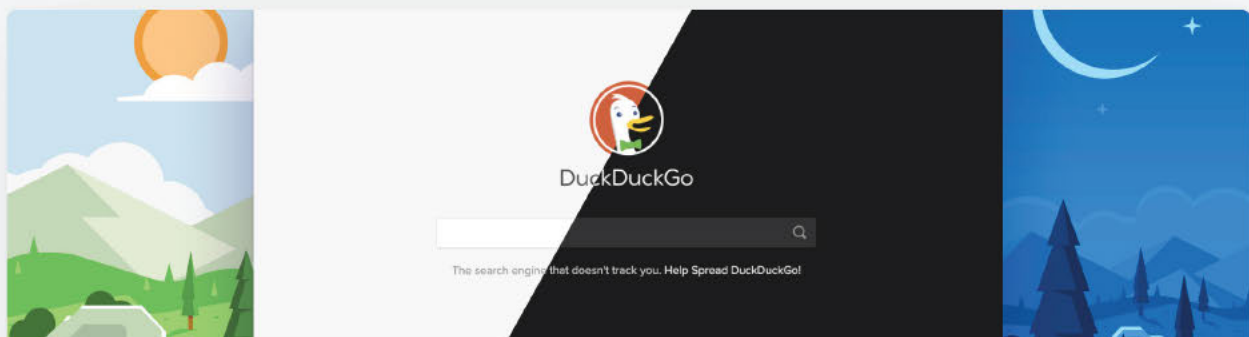
DUCKDUCKGO NEWS

### DuckDuckGo Privacy Essentials for Safari: Tracker Blocking & Privacy Dashboard

We're delighted to announce that DuckDuckGo Privacy Essentials is now available for Safari users, helping even more people get the privacy they deserve.



2 MIN READ





DUCKDUCKGO NEWS

## DuckDuckGo Search Improvements: Past Year Date Filter, Dark Theme Refinements, and More!

We're excited to share several improvements to DuckDuckGo Search that should make your searching not only more effective, but also a more pleasant experience.



5 MIN READ

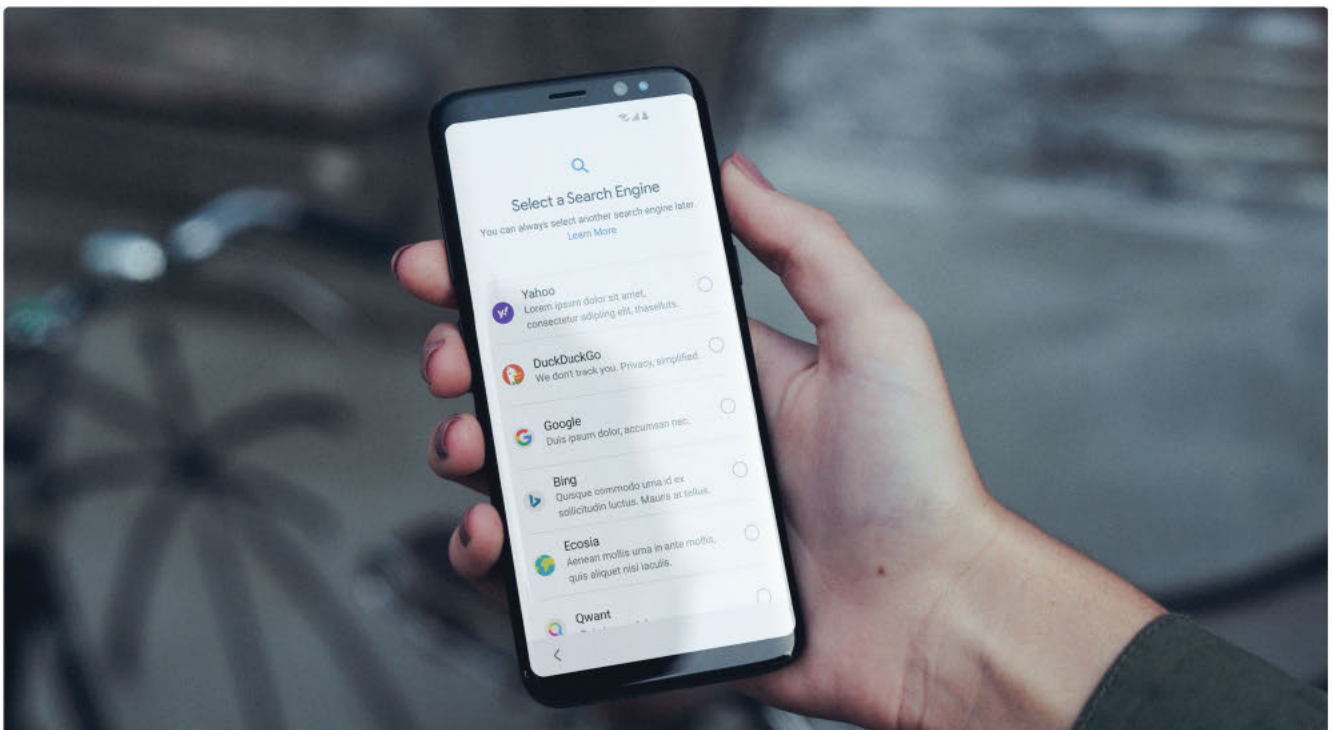
Spread Privacy © 2021

[Latest Posts](#) . [Twitter](#) . [Reddit](#) . [Privacy Crash Course](#) . [About DuckDuckGo](#)

[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Search Preference Menus: Improving Choice With Design

FILED UNDER OPINION ON 28 JAN 2020



*This is the second in a [series](#) of posts about search preference menus.*

Even people who don't consider themselves "tech-savvy" understand the way apps and websites are designed can [subconsciously influence](#) people's decision making. [Ethical design](#) can empower and educate users to make the best decision for themselves. By contrast, improper design can give users the impression of freedom, when in fact subtle cues are driving users toward a certain so-called choice.

As explained in the [first post](#) of this series, we believe a search preference menu — one that **changes all search defaults and includes the most common Google alternatives** — can deliver meaningful search engine choice to consumers and significantly increase competition in the search market. In short, it's a great tool

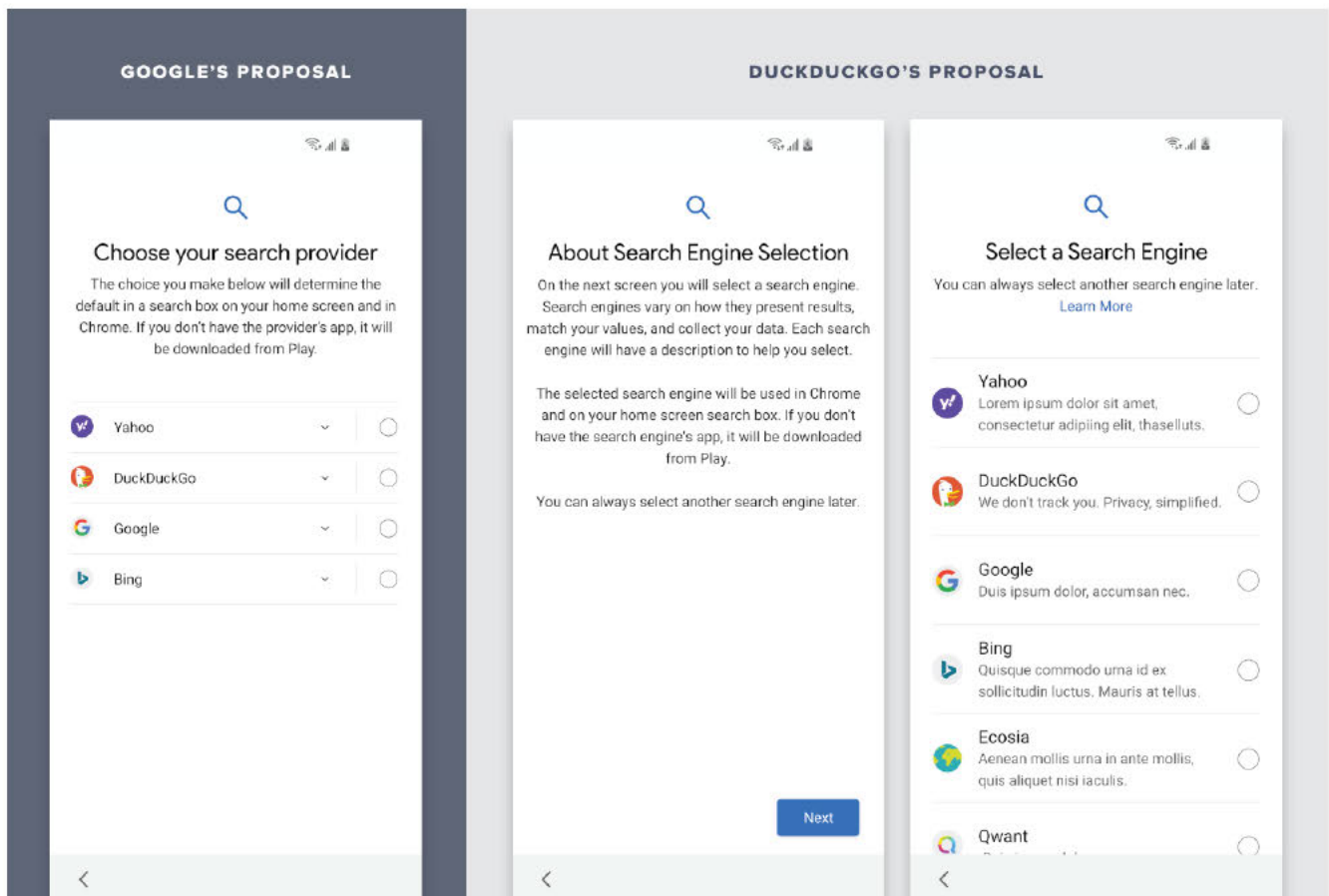
when done right.

However, we believe Google's search preference menu [for the European Union](#) is designed in a way that undercuts the very reason it was created, making it harder than necessary for people to choose an alternative.

As a result, we've suggested a number of design improvements to Google's search preference menu. While our proposed changes may seem subtle, our research indicates their impact would be significant.

Perhaps most significantly, Google has artificially [limited the number of search engine choices](#), ignoring the option of a scrolling menu. This restriction is surely tied to the underlying pay-to-play auction model for these artificially-limited slots, which we believe is fundamentally wrong, and will be the subject of our next post.

In addition, design features like an introductory screen, automatically displaying the description of search engine alternatives, simpler language, and more, would all make a significant impact. These aren't new or controversial design concepts; in fact, they've been used before in [similar situations](#).

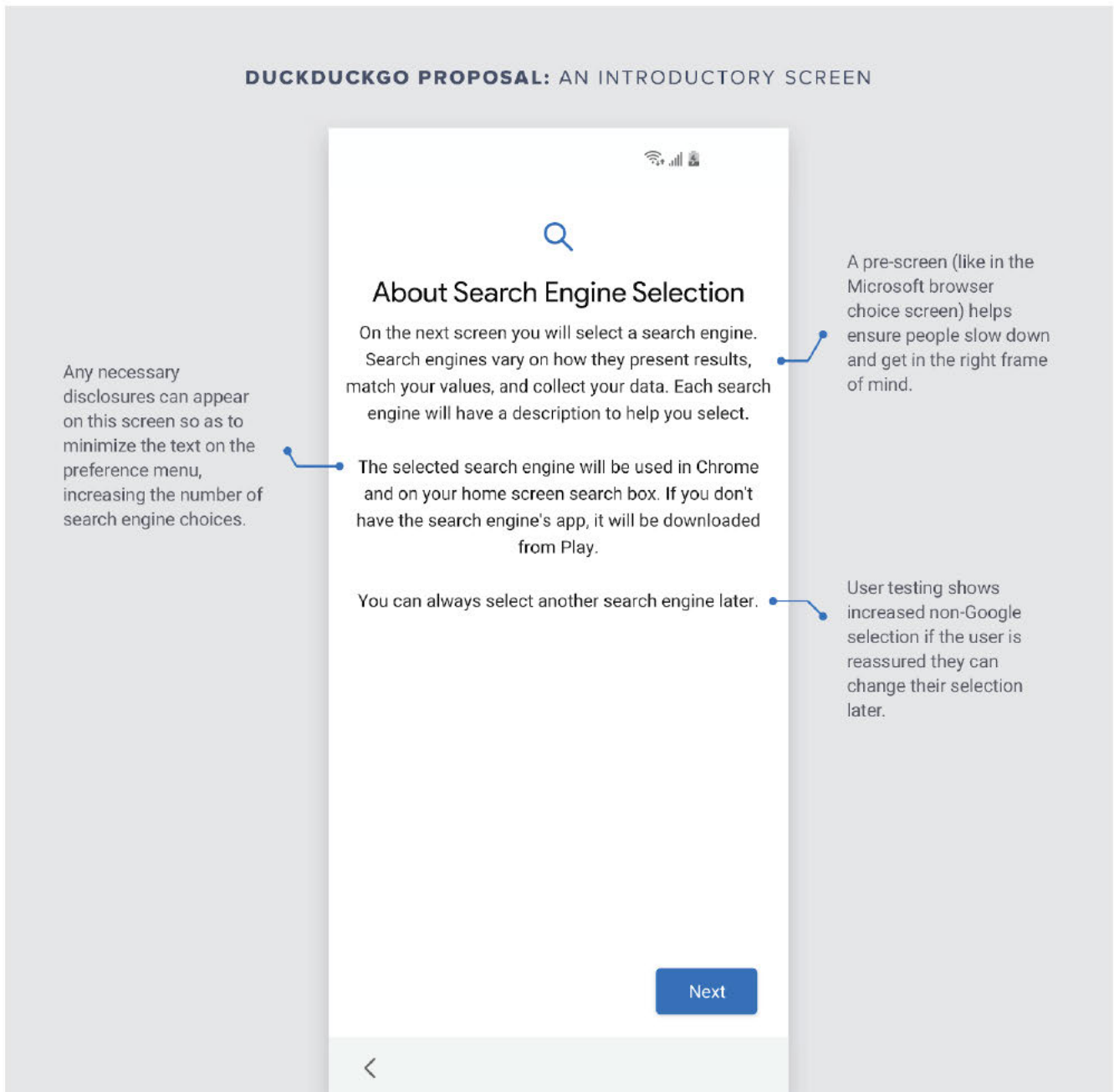


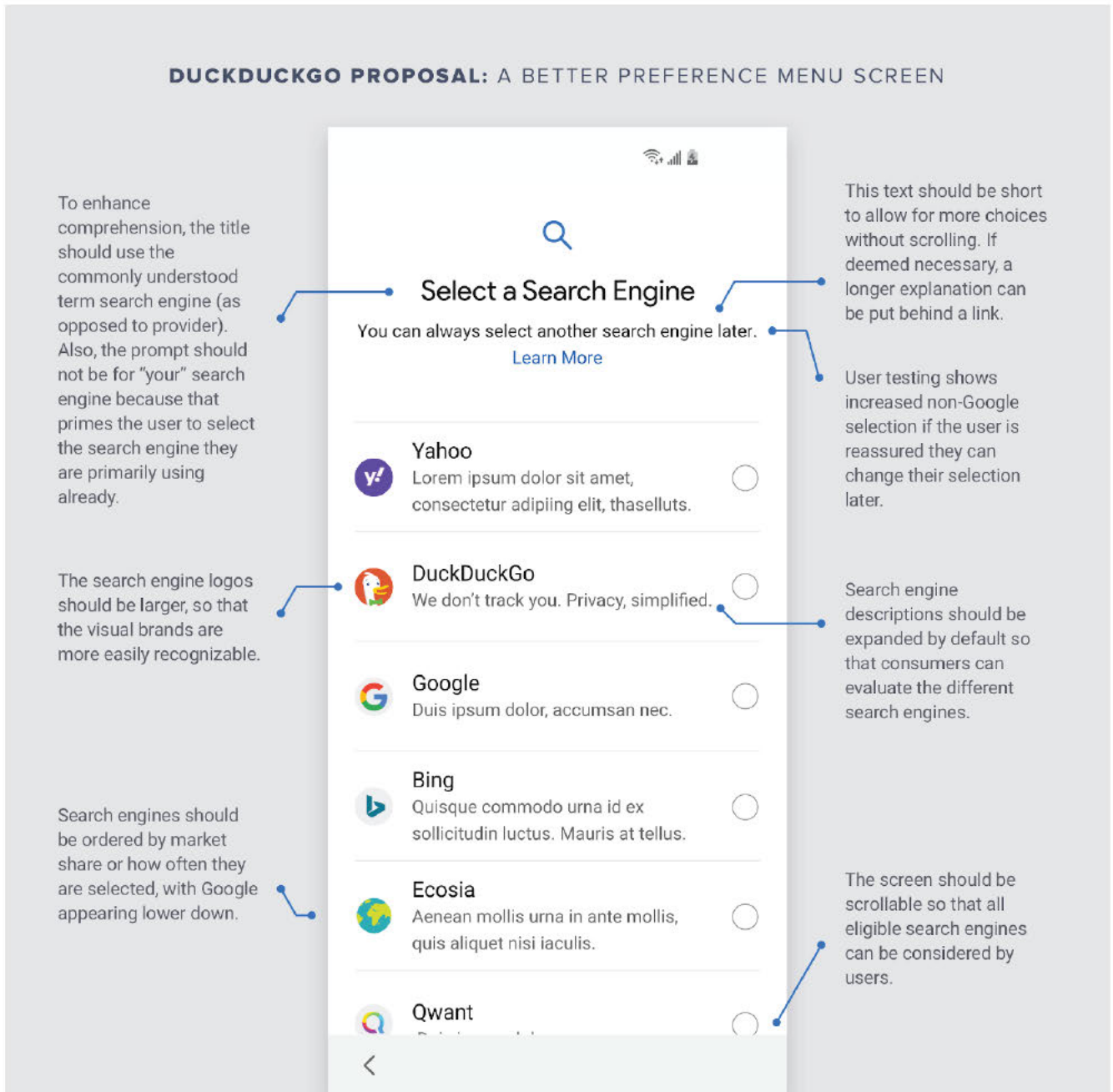
# DuckDuckGo's Proposed Changes Explained

- *Consumers should be able to select from more than four choices.* It's very easy, and common, to have a scrollable screen. And importantly, when we presented people with a longer list of search engines, those people selected more non-Google search engines. In other words, more choice means more diverse market share.
- *Consumers should see an introductory screen.* This helps ensure consumers slow down in the onboarding process and get in the right frame of mind to make a search engine selection. We propose a screen entitled "About Search Engine Selection." It would explain, "On the next screen, you will select a search engine. Search engines vary in how they present results, match your values, and collect your data."
- *Consumers should be reassured that they are not permanently bound by their choice.* Our user testing shows simply adding the sentence "You can always select another search engine later" substantially increases adoption of non-Google search engines.
- *Consumers should be prompted to select a search **engine**.* Consumers more readily understand the "search engine" phrasing to the more clinical-sounding phrase "search provider."
- *Consumers should be prompted to select **a** search engine.* The title text should strike **your** because the vast majority of consumers already use Google, so asking a consumer to pick "your" search engine has the subconscious effect of priming most people to pick Google.
- *Consumers should read concise text, without confusing or unduly alarming concepts.* For example, many consumers erroneously think Chrome and Google Search are synonymous, or at least associate Google with Chrome, and so mentioning Chrome influences consumers to choose Google. Similarly, consumers are disinclined to try a new search engine if they are told that it will download software; yet, that only occurs because Android phones are pre-loaded with Google Search. Any necessary disclosures can be

provided through a “Learn More” link.

- *Consumers should see larger logos.* This makes it easier to quickly recognize trusted search engine brands.
- *Consumers should see search engine descriptions automatically.* We propose a short search engine description that's automatically displayed. In contrast, Google's design hides these descriptions unless the consumer touches a button.





## User Testing

We user-tested these design changes to confirm they would increase consumer choice. They did. We ran many user tests to isolate individual changes, though below is what the overall results look like. Consumers overwhelmingly declare, in a statistically significant fashion, that our preference menu design proposal would make them "more inclined to pick a search engine other than Google."

### Poll Results

Statistically Significant Private Nov 20, 2019

**Question**  
Which version of this search preference menu would make you more inclined to pick a search engine other than Google?

200 Respondents General Population

Download Share

**Option A**

Choose your search provider

The choice you make below will determine the default in a search box on your home screen and in Chrome. If you don't have the provider's app, it will be downloaded from Play.

- Yahoo
- DuckDuckGo
- Google
- Bing

SCORE: 33.5 67 votes

**WINNER**

**Option B**

Select a Search Engine

You can always select another search engine later.  
[Learn More](#)

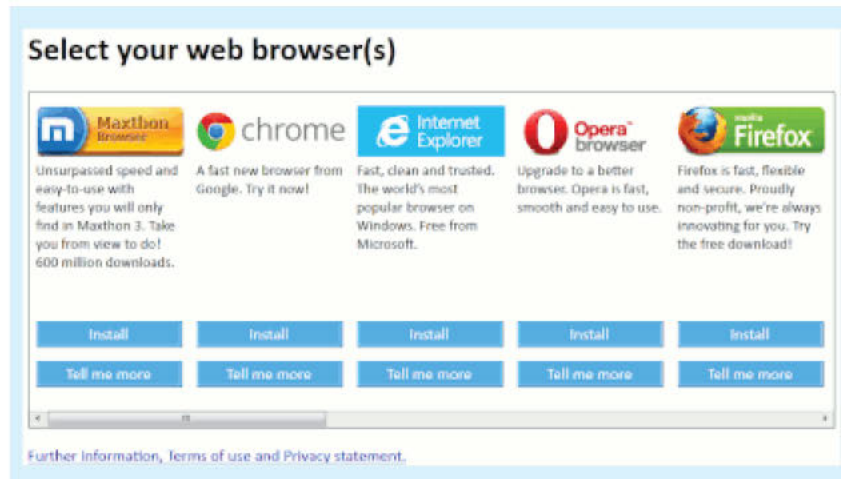
- Yahoo
- DuckDuckGo
- Google
- Bing
- Ecosia
- Qwant

SCORE: 66.5 133 votes

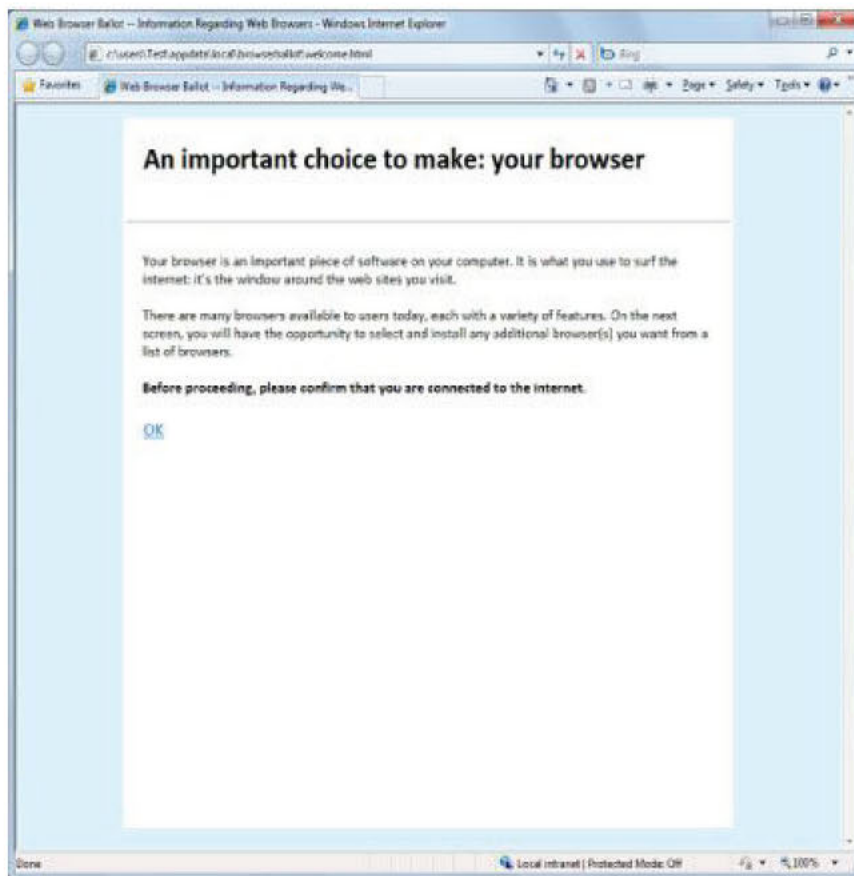
## Microsoft's Browser Preference Menu

These aren't new or controversial design concepts. On the contrary, they have historical precedent. A scrollable preference menu was even used ten years ago in

Microsoft's [browser preference menu](#). In that design (depicted below), the top five browsers by market share appeared first in random order, followed by a second, randomly ordered tier. And, no browsers paid for placement!



Finally, also similar to our proposal, it also featured [an introductory screen](#).



For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).





# DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy newsletters.


- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or associated with anonymous searches.

— Spread Privacy —

## Opinion



Dear Google: We Agree Search Competition Should Be "Only 1 Click Away" – So Why Is It 15+ on Android?

---

Search Preference Menus: Google Auction Ignores Screen Size and Scrolling

---

Working from Home? Consider These Privacy-Focused Tools

---

[See all 12 posts →](#)



PRIVACY RESEARCH

## The Hidden Privacy Risk in Note-Taking Apps

Saving private information to an unencrypted note-taking app is a largely unknown, everyday privacy risk that almost half of Americans are engaging in. Here's what you can do to protect yourself.



3 MIN READ



DEVICE PRIVACY TIPS

## Protect your privacy in 2020 in 5 simple steps

Resolve to take back control of your personal data online with these few quick steps, and protect your privacy in 2020.



2 MIN READ



[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Search Preference Menus: No Auctions Please

FILED UNDER OPINION ON 10 MAR 2020



*This is the third in a [series](#) of posts about search preference menus.*

As Google's search preference menu [for Android devices in the European Union](#) goes live, the process to be a part of this preference menu is based on a recurring auction model, offering Google-alternative search engines the chance to bid for three spots in each EU country, with the proceeds going to Google. [We won](#) a spot in the first auction, and we're glad Android users in Europe will finally have the opportunity to easily pick DuckDuckGo as their default search engine.

However, given the current construct, it's very unlikely we will remain an option in next year's auctions. That's because search engines who squeeze money out of every last drop of people's personal information (including ISPs and arbitrage players that will participate in next year's auctions) are easily able to outbid search engines like

us that respect people's privacy. This auction remedy, proposed by Google, was constructed to make Google money, not to provide meaningful consumer choice.

That's why we strongly believe it is in the best interest of consumers to throw out this auction model and replace it with a non-pay-to-play model that includes more than three alternative choices.

Quite simply, a preference menu that is missing the search engines consumers expect, and that is instead filled with search engines that don't deliver good consumer experiences, is a sham. [Our research shows](#) that, after Google, people would choose DuckDuckGo second most, and more generally want to be able to choose a private search engine.

In particular, an auction model disadvantages search engines that:

- Put user experience over monetization and so show fewer ads.
- Put privacy before profit and so make less money per ad shown.
- Give away a substantial portion of their profits to good causes.

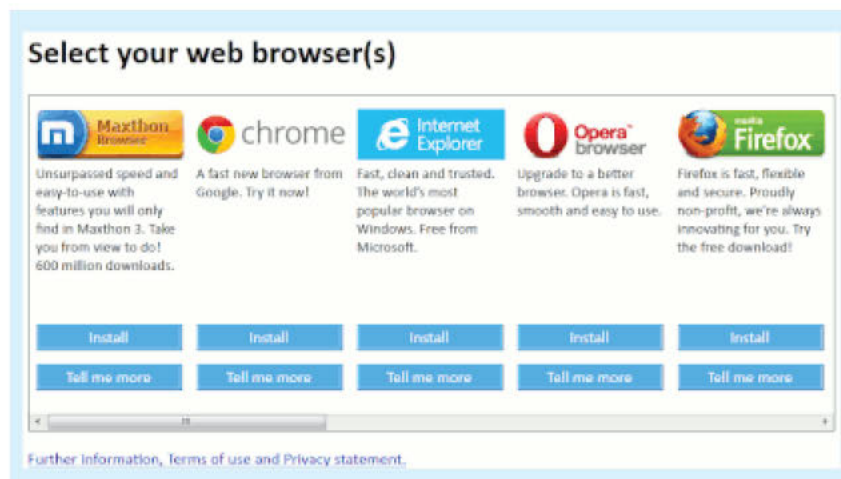
DuckDuckGo [does all three](#) of these things. Also, DuckDuckGo and most other search engines syndicate search ads from larger companies, splitting revenue with them. These larger companies are therefore by definition further advantaged in any auction process relative to their syndication partners: they do not have revenue splits and they know what their syndication partners can reasonably bid.

In short, the pay-to-play auction model is rigged in favor of big companies and search engines with intentionally ad-heavy search results. They can afford to pay many times more relative to smaller providers like us, even though we have a [high numbers of users](#) because of our consumer-friendly search experience. Unless this auction format is fundamentally altered, consumers will eventually be forced to pick from options who can pay the most, not from the options that [they actually want](#).

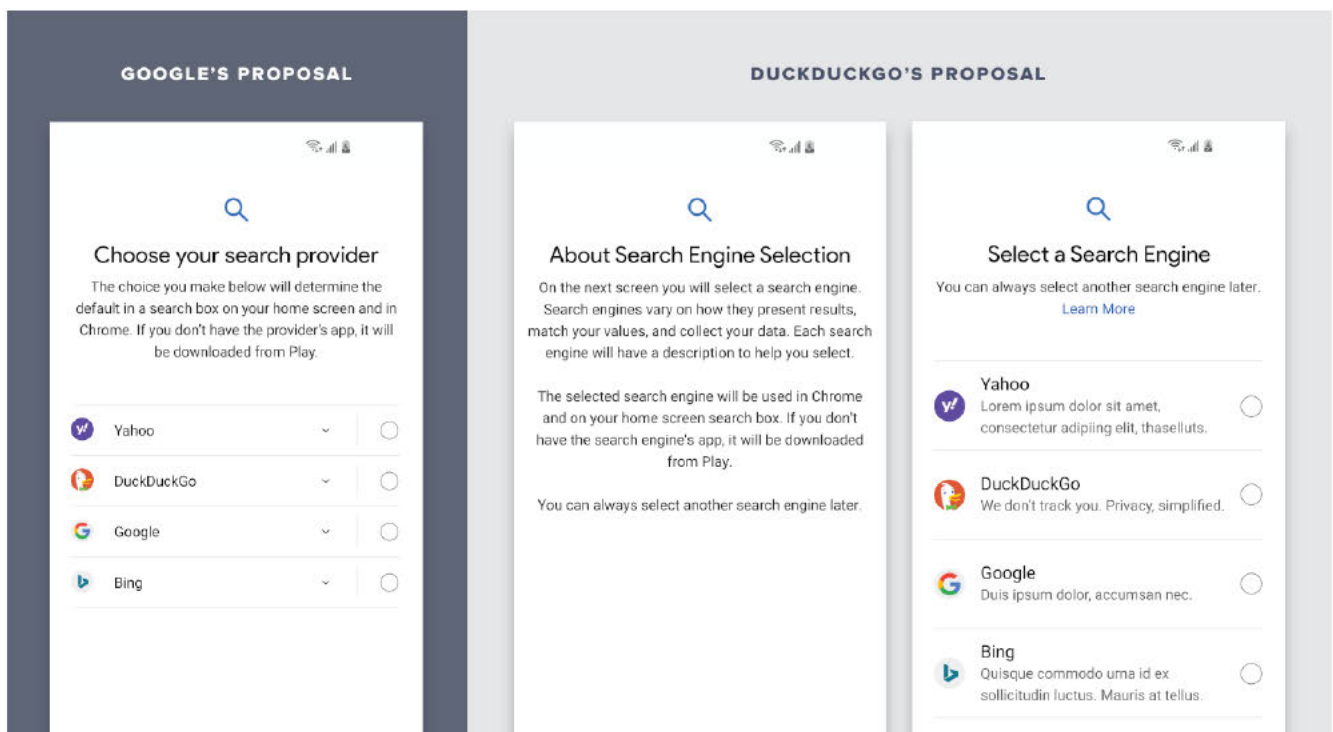
**The Solution: Throw Out the Auction**

An easy solution exists: throw out the auction. It simply isn't necessary, as history has already shown. A search preference menu recently [shifted Android market share in Russia](#) without an auction.

Additionally, in 2010 Microsoft created a successful browser preference menu without an auction. In that case (depicted below), the top five browsers by market share appeared first in random order, followed by a second, randomly ordered tier. And importantly, no browsers paid for placement!



This two-tier system solves the problem of making sure the search engines that consumers most expect appear first, while still allowing for other search engines to be included in the menu. [Our previous post](#) explains in detail how this could be visually designed.





When we presented people with a longer list of search engines, those people selected more non-Google search engines. In other words, more choice means a more diverse search engine market, assuming the choices people expect to be there are there.

## Winning and Losing Auctions

For this first year of Google's EU preference menu, three auctions are being held. The number of bidders in these initial auctions is limited because Google first designed the process as a “first price” auction (meaning you pay what you bid), imposed a variety of other eligibility requirements (e.g., in-app language localization across all EU countries), and set a tight deadline to submit applications. We suspect this resulted in most search engines either not knowing about the deadline in time to meet the eligibility requirements or finding the original format to be completely unacceptable, and so they didn't submit the necessary paperwork on time.

When, later, Google revised the process to a “fourth price” auction (meaning everyone pays the first losing bid after the three winning bids) and also revised the eligibility requirements (e.g., English localization is now accepted everywhere), Google did not re-open the 2020 auctions to companies that didn't earlier apply. But in 2021, Google is planning to start over, allowing all general search engines to bid, including sites you don't normally think of as search engines like ISPs and arbitrage sites (that buy keywords and send you to pages of ads instead of actual search results).

Thus, starting in 2021, we expect many more bidders, most all of which can make more money per search than us because of their less consumer-friendly business models. In other words, it is very likely we will be easily outbid and not be on the preference menu in next year's auctions and thereafter.

We also expect new search engines to be created for the express purpose of taking

advantage of this preference menu format. It is relatively easy for a new or existing company to create a sub-par search engine with a very high behavioral ad load and poor search results (e.g., lacking useful instant answers like maps and facts). Hundreds of these sites already exist, such as ISP start pages.

You would think that if people selected one of these sub-par search engines, they might quickly switch to another after getting poor search results, but currently the preference menu is designed in a way that it is only accessible when setting up a device. That is, it is impractical to get back to the menu (it's only possible by resetting the device) and so it isn't easy to change your selection.

## Debunking Reasons for the Auction Model

It's our understanding that the auction model has been adopted because it supposedly (a) provides money for Android development and (b) determines who most deserves to be listed in an efficient, market-driven manner.

First, Google does not need money from other search engines to fund Android development. That's just silly. Google is sitting on over 100 billion dollars in cash, which is growing by the day.

Second, we already have an efficient, market-driven mechanism to determine who most deserves to be there: market share, as used in the Microsoft example above. Another way, not dependent on any third parties, would be to order the list dynamically based on how often a search engine is selected in a given market.

In any case, if organized by market share or dynamically, we believe Google still shouldn't be listed first, and that there should be more than three alternative choices given. This design results in the best consumer experience and the most search engine market competition. As it stands now, by only having three alternatives, Google has manipulated the preference menu to introduce false scarcity. This scarcity is designed to result in over-subscription to the auction, further inflating the cost to competitors of participating (and thus the financial benefit to Google of them doing so).

Moreover, as mentioned above, because so many search engines syndicate from



larger upstream providers, an auction model is intrinsically biased. The larger upstream providers will always know what their downstream partners earn and can always outbid them.

Unless the auction model is thrown out, we believe DuckDuckGo and many other search engines that consumers actually want to use will not be on the search preference menu in the long term. At the same time, and as explained in the [first post](#) of this series, we still believe a search preference menu can deliver meaningful search engine choice to consumers and significantly increase competition in the search market.

In other words, if you want to incentivize greater consumer choice in the search engine market, a properly designed and structured preference menu is a great way. But an auction format is not the proper structure, and arguably the worst possible way to implement it.

---

*For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).*



## DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy newsletters.

Your email address

- ✓ **Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- ✓ **Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or associated with anonymous searches.

— Spread Privacy —

## Opinion



Dear Google: We Agree Search Competition Should Be "Only 1 Click Away" – So Why Is It 15+ on Android?

Search Preference Menus: Google Auction Ignores Screen Size and Scrolling

Working from Home? Consider These Privacy-Focused Tools

[See all 12 posts →](#)



PRIVACY RESEARCH

### The Risky Business of Charging Your Phone in Public

It has become commonplace to find free USB charging stations in many public areas, from airports to hospital waiting rooms. While this seems like a thoughtful accommodation, a quick recharge from a USB port in a public setting could actually put your data at risk of being stolen

Search Preference Menus



2 MIN READ



DUCKDUCKGO NEWS

## DuckDuckGo Tracker Radar Exposes Hidden Tracking

DuckDuckGo Tracker Radar is a best-in-class, automatically-generated data set about trackers that we've made available for research and generating block lists.



8 MIN READ

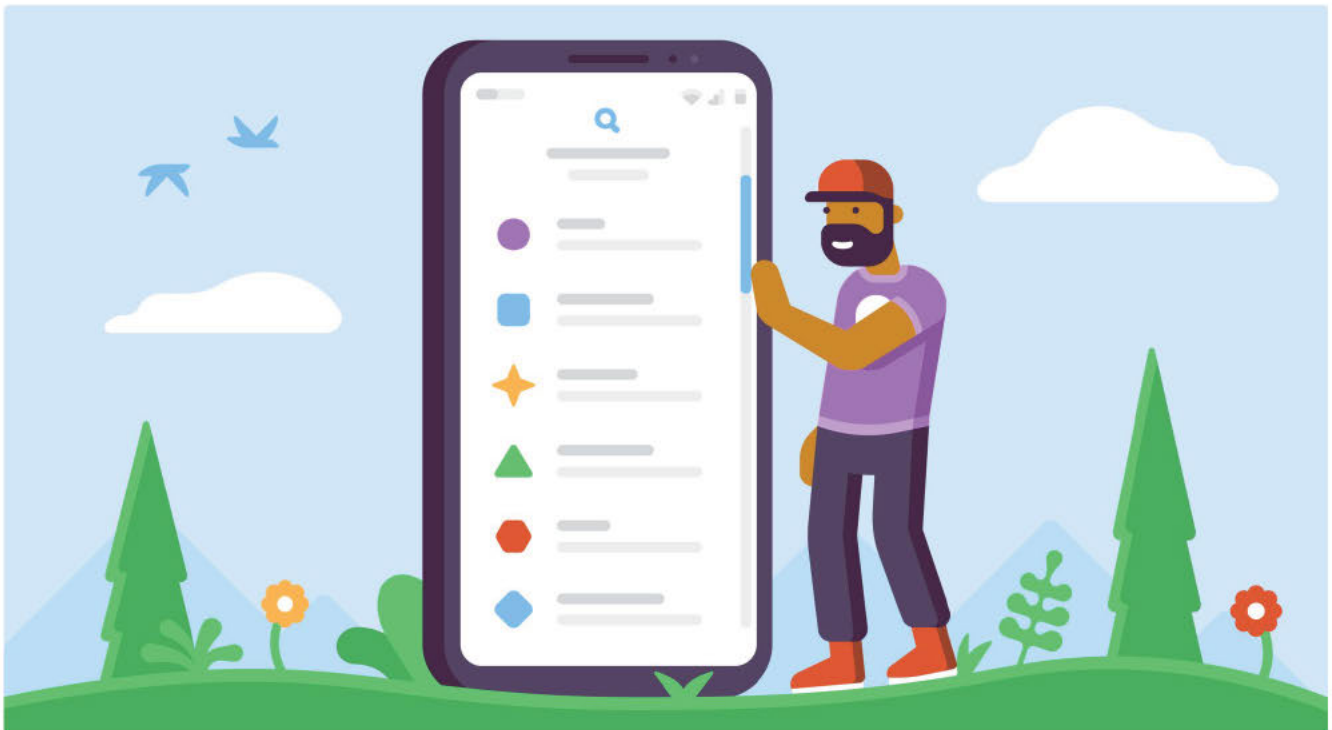
Spread Privacy © 2021

[Latest Posts](#) . [Twitter](#) . [Reddit](#) . [Privacy Crash Course](#) . [About DuckDuckGo](#)

[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Search Preference Menus: Google Auction Ignores Screen Size and Scrolling

FILED UNDER OPINION ON 20 MAY 2020



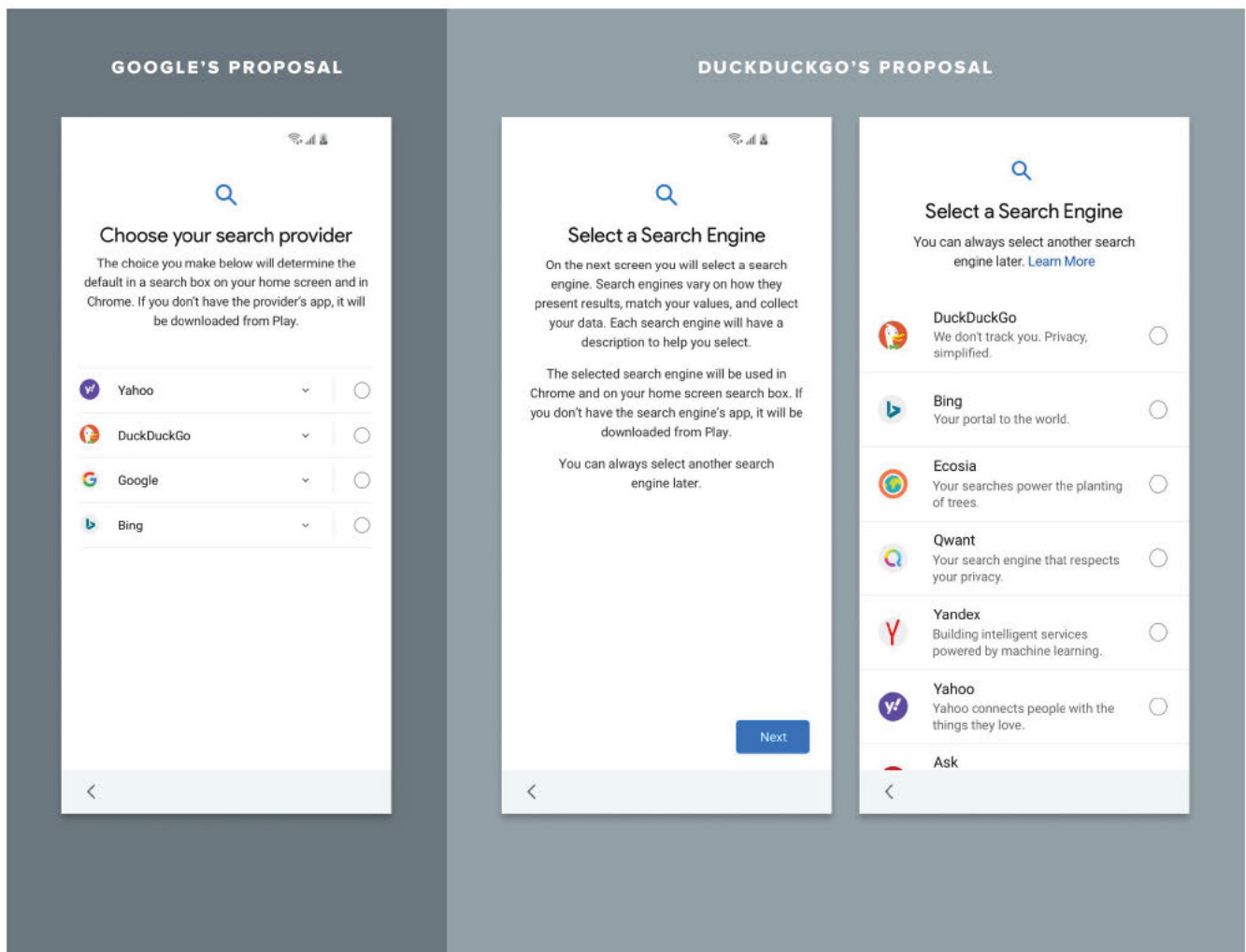
This is the fourth in our [series of posts](#) about search preference menus.

- DuckDuckGo has researched market conditions and user behavior on search preference menus for submission to the UK Competition and Markets Authority and European Commission.
- User testing shows that over 60% of people scroll past a first screen to see more search alternatives, and that increases to 80% if Google is not on the first screen.
- Using our proposed design, 24% of Europeans choose a Google alternative, which is 8 times higher than the 3% today.
- 96% of Android phones in Europe can display 5 search engines on the first

screen, and 51% can display 6 or more, while still showing descriptions for all. Just 4% can only display 4 options.

As part of ongoing discussions about search preference menus with the UK Competition and Markets Authority (CMA) and European Commission (EC), today we are providing data that answers two questions about our proposal (depicted below):

1. How many search engines can fit on typical Android phone screens for devices sold in Europe?
2. Will people scroll to see search engines beyond the first screen?



As explained in the [first post](#) of this series, we believe search preference menus — ones that change all search defaults and include the most common Google alternatives — can deliver meaningful search engine choice to consumers and significantly increase competition in the search market. In short, it's a great tool

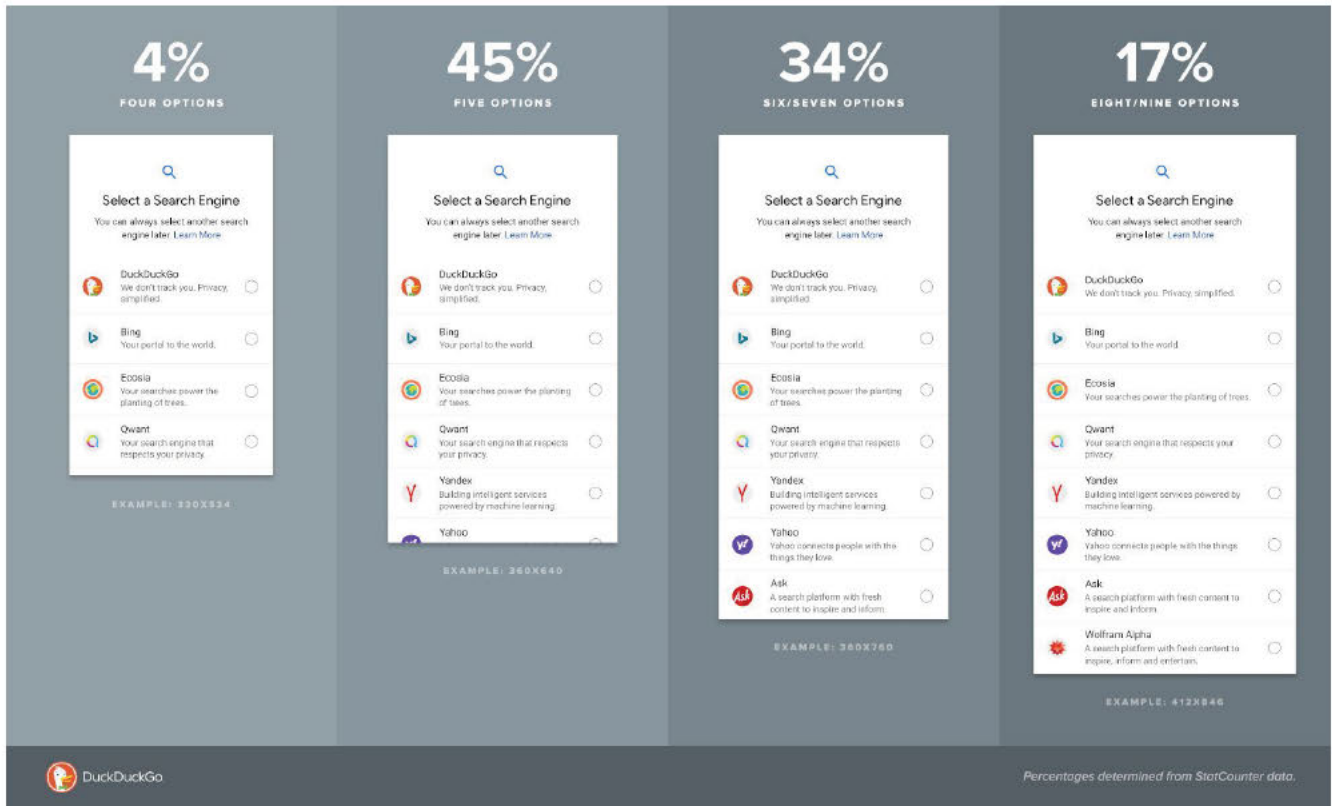
when done right.

However, Google's search preference menu [for the European Union](#) is designed in a way that undercuts the very reason it was created, making it harder than necessary for people to choose an alternative. As a result, in the [second post](#) of this series we proposed a number of design improvements to Google's search preference menu.

Central to our suggested design improvements is significantly increasing the number of search engines options from just four, which Google has made artificially low because they are extracting money from the preference menu via an auction format (alternative search engines must bid for placement). We strongly believe it is in the best interest of consumers to throw out this auction format and replace it with a non-pay-to-play model that includes way more than four options, as explained in the [third post](#) of this series.

However, some people have questioned how many search engines can fit on the first screen, and whether people would scroll beyond the first screen. So, we decided to provide objective data.

**First, almost all (96%) of Android phones in Europe can display five or more search engines, and over half (51%) can display six or more, even when showing larger logos and search engine descriptions by default. The average phone displays just over six (6.1). Just 4% of phones fit only four options.**



The data that underlies these numbers comes from [StatCounter](#) via their [screen resolution stats report](#) for mobile phones in Europe. To ensure the highest accuracy in our conclusions, StatCounter produced for us [a more detailed report](#) with more screen sizes. We also removed [iPhone screen resolutions](#), so that only Android screen resolutions remained in the report.

These results reflect a global trend of larger phones becoming more common. According to Statista, annual shipments of phones with a screen size smaller than 5" are [expected to shrink](#) from 150M in 2018 to just 25M in 2022.

Second, we ran live click tests to see if people will scroll, and the answer is a resounding yes. We conducted an experiment with 334 mobile Android users in Europe. In a first test users saw Google and the most common search engine alternatives on the first screen. Yet, 64.4% ( $\pm 5.1$ ) still scrolled beyond the first screen to consider other search engines before actually selecting their search engine. (All of these results are statistically significant using a confidence level of 95%.)

In a second test of 356 mobile Android users in Europe (depicted below), when Google was moved to the last screen, 79.8% ( $\pm 4.2$ ) scrolled beyond the first screen,

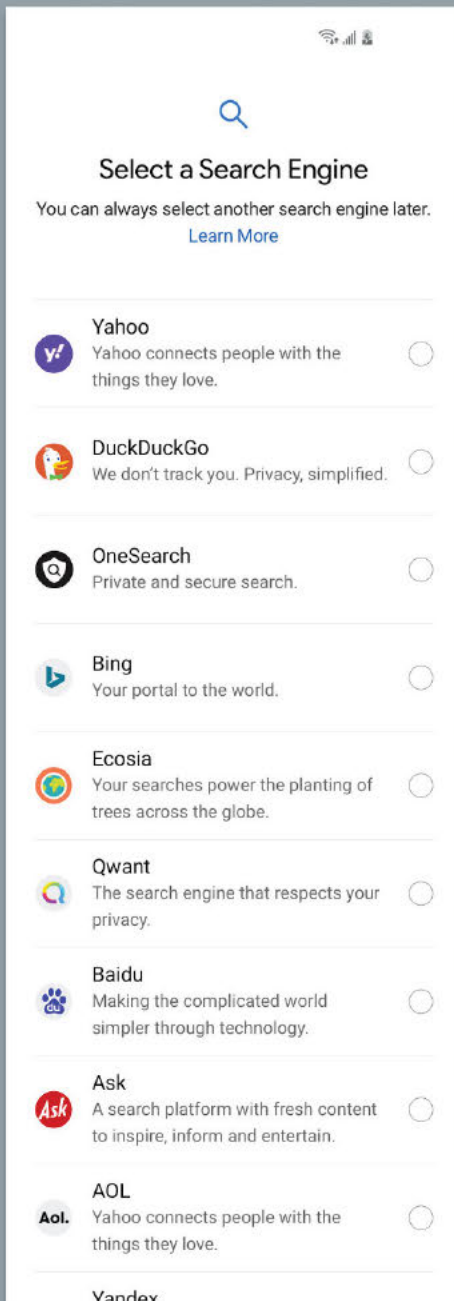
and 75.8% ( $\pm 4.4$ ) selected Google as their search engine. (In the first test, 80.8% ( $\pm 4.2$ ) selected Google.)



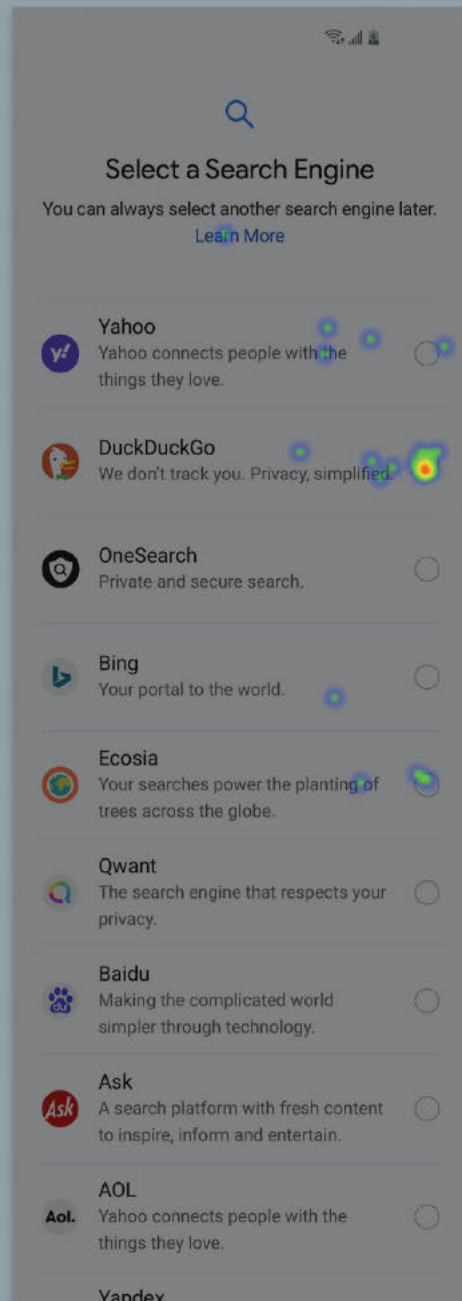
# User Preference Scrolling Behavior

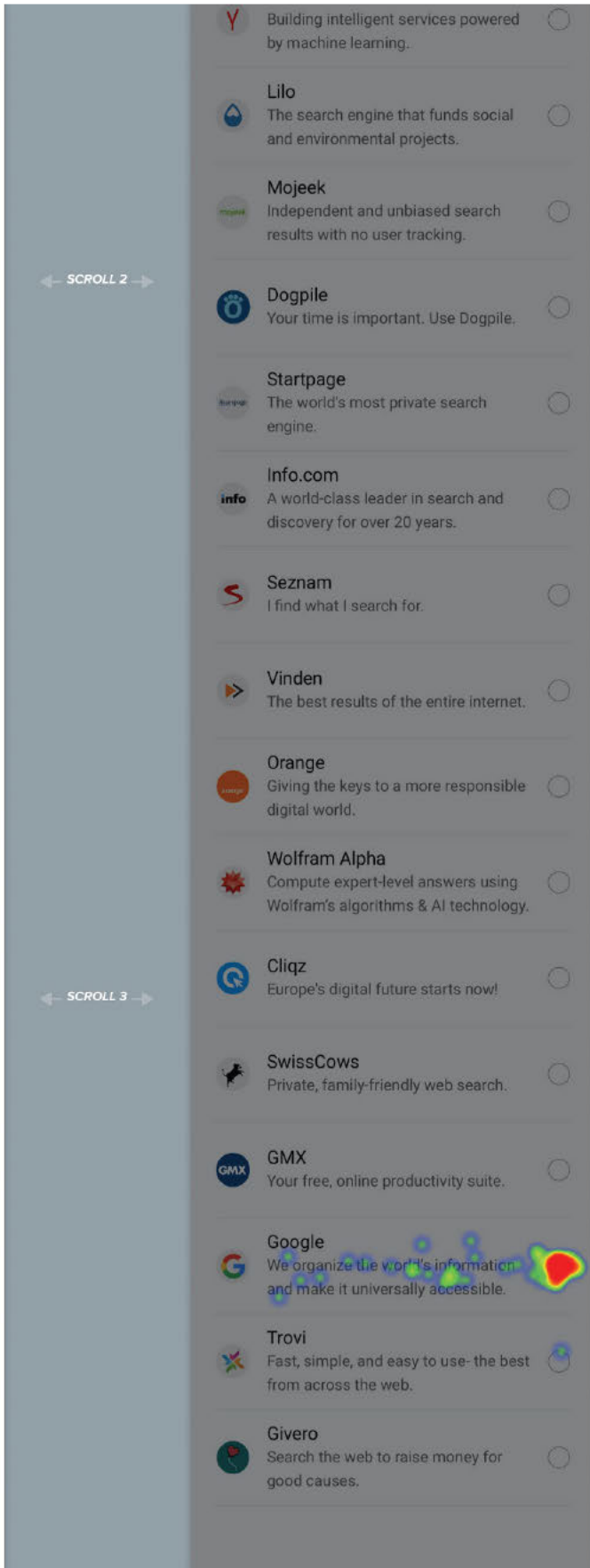
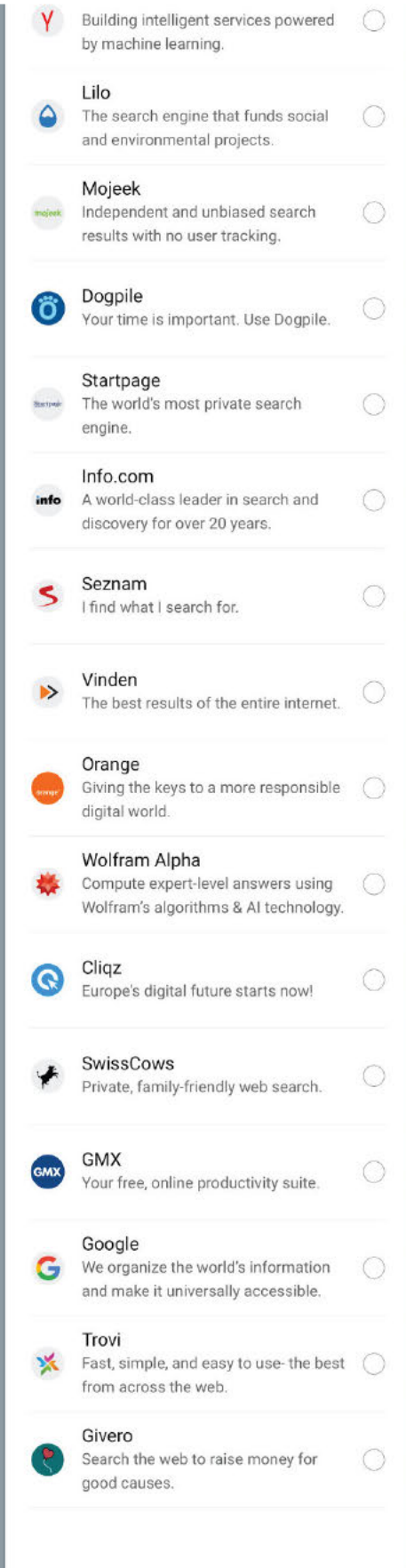
## USER TESTING QUESTION

“Imagine you're setting up a new Android device for the first time and you're presented with the following screen. Please choose your preferred search engine, which will be used for the web searches you conduct on your device.”



← SCROLL 1 →





Feb 2020 survey of 356 mobile Android users from the European Union and the United Kingdom.

This user testing shows that the best way to increase competition in a search preference menu is to display Google on the last screen. Our second test (using this format) resulted in 24.2% ( $\pm 4.4$ ) of users selecting Google alternatives, a full 8x higher than the 3% current market share of Google alternatives [on mobile in EU countries](#).

For any design, showing Google near the bottom of a scrollable list allows one more alternative search engine to be displayed on the first screen. Wherever Google is displayed, however, our study shows the majority of people will still scroll to check out alternatives.

In our [earlier study](#), we proved that more choice means more diverse market share. A scrollable list maximizes the number of choices. In our proposal, the alternative search engines with the most market share in a given market are shown on the first screen, randomly ordered. The remaining alternative search engines are available by scrolling, randomly ordered. Google is placed on the last screen.

## Methodology

Click (heat map) results are based on the polling of random samples of European Android users via the [Helio platform](#). Respondents were paid. All reported results above are statistically significant at a confidence level of 95%.

---

*For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).*



**DuckDuckGo**  
Privacy Newsletters

# Privacy Newsletters

Stay protected and informed with our privacy newsletters.


- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or associated with anonymous searches.

— Spread Privacy —

## Opinion



Dear Google: We Agree Search Competition Should Be "Only 1 Click Away" – So Why Is It 15+ on Android?

---

Working from Home? Consider These Privacy-Focused Tools

---

Working Remotely for the First Time? Here Are 5 Tips From Our All-Remote Team

---

[See all 12 posts →](#)



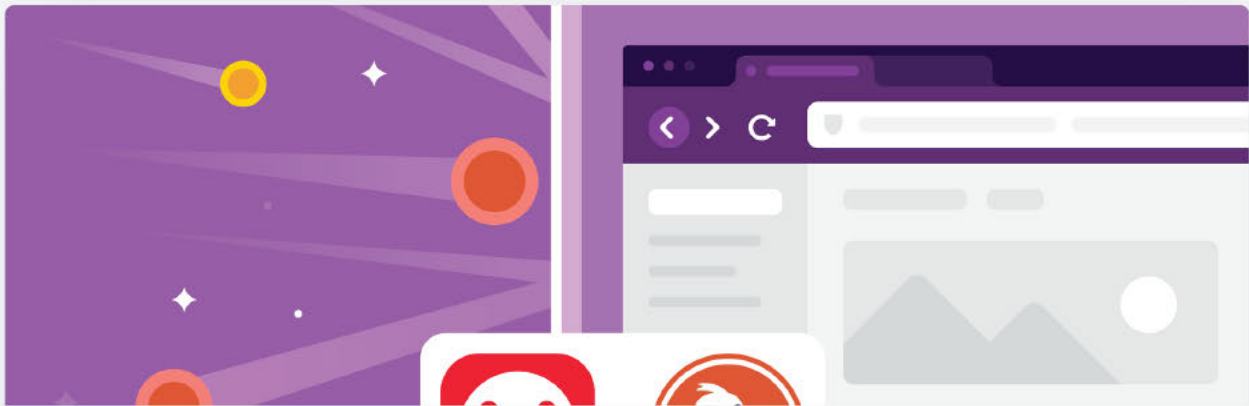
PRIVACY RESEARCH

## Google Search Mobile Market Share Likely to Drop Around 20% through Search Preference Menus

How to increase competition in the search engine market? Our new research shows that 24% of people in the US, 24% in the UK & 17% in Australia would choose a non-Google search engine when given the chance to express their preference on their mobile phones.



3 MIN READ



DUCKDUCKGO NEWS

## Better Privacy for Vivaldi Users, Thanks to DuckDuckGo Tracker Radar

We're delighted to announce the Vivaldi browser has incorporated DuckDuckGo Tracker Radar, resulting in easy, effective tracker protection for its users.



1 MIN READ

Spread Privacy © 2021

[Latest Posts](#) . [Twitter](#) . [Reddit](#) . [Privacy Crash Course](#) . [About DuckDuckGo](#)

[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Google Search Mobile Market Share Likely to Drop Around 20% through Search Preference Menus

FILED UNDER PRIVACY RESEARCH ON 10 AUG 2020



This is the fifth in our [series of posts](#) about search preference menus.

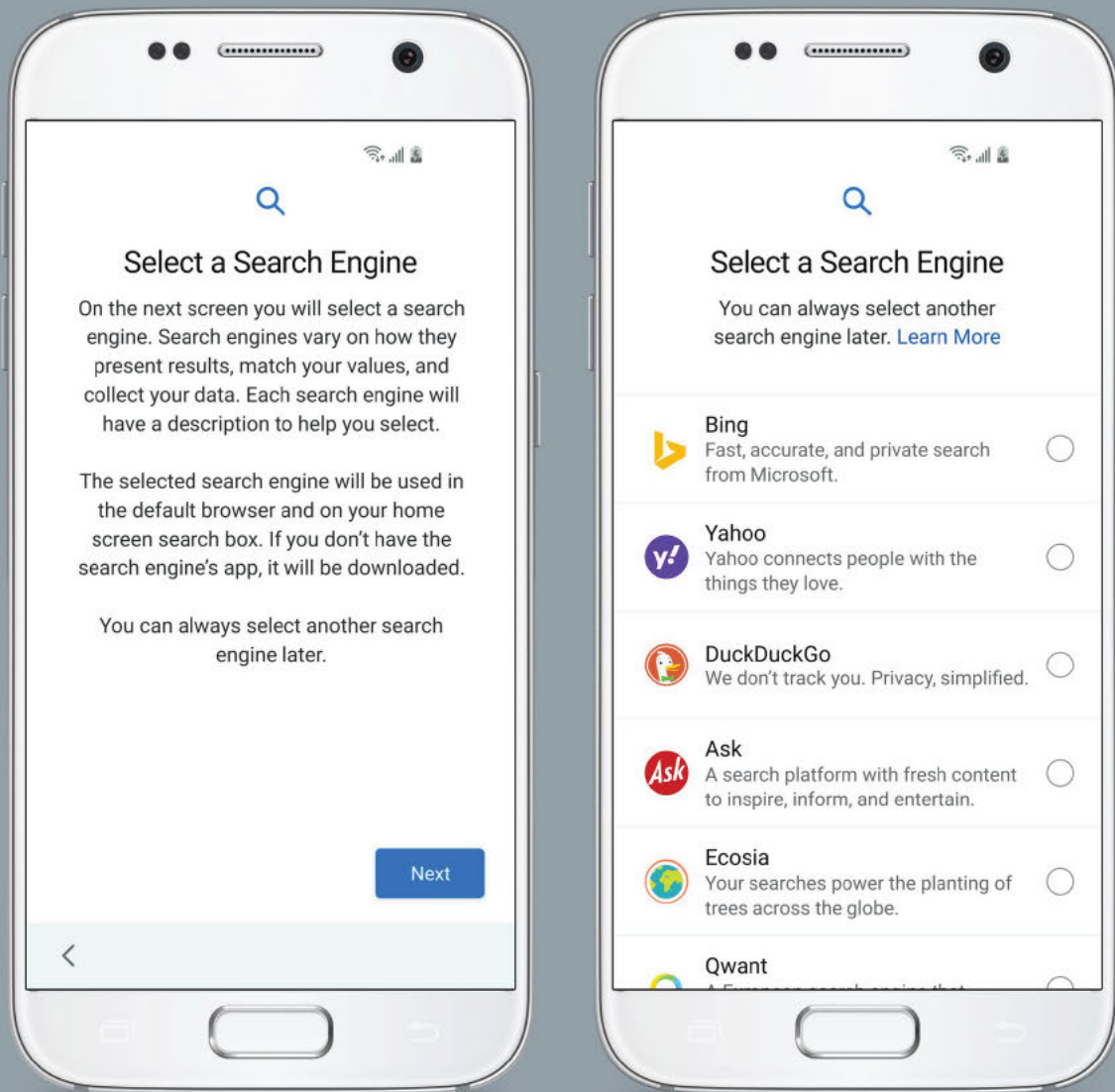
- Large-sample user testing shows that 24% of people in the U.S., 24% in the U.K., and 17% in Australia would choose a non-Google search engine when given the chance to select a preference on their mobile phones.
- Given Google's current market share in mobile search is 95% in the U.S., 98% in the U.K., and 98% in Australia, a preference menu could reduce Google's mobile market share by 20%, 22%, and 16%, respectively.
- This user testing also shows people will scroll to check out their options before making a search engine selection, meaning Google could be placed

on the last screen of any search preference menu.

As explained in the [first post](#) of this series, we believe search preference menus — ones that change all search defaults and include [the most common](#) Google alternatives — can deliver meaningful search engine choice to consumers and significantly increase competition in the search market. In short, it's a great tool when designed right.

Today, as part of our ongoing discussions about search preference menus with the federal and state enforcers in the U.S., the U.K. competition authorities, and the Australian Competition and Consumer Commission (ACCC), we are releasing new research data regarding how effective a properly designed preference menu can be in increasing competition and empowering consumers. This new data is from live large-sample user testing conducted with 12,000 people across those three countries. Participants interacted with our [proposed design](#) (depicted below) on their mobile phones.

## Search Preference Menu



DuckDuckGo.

In the first test, 3,000 people in each country interacted with the menu, for a total of 9,000 overall. The results show that if a properly designed search preference menu is pushed to all smartphone users, Google's mobile market share is likely to immediately drop by 20%, 22%, and 16% in the U.S., U.K., and Australia, respectively. And, this could just be the start. Because people would finally be able to easily change their search defaults, and as people become familiar with search engine alternatives, we expect even greater market share changes as time goes on.



### Change in Google Mobile Market Share

COUNTRY	GOOGLE MOBILE MARKET SHARE (CURRENT)	GOOGLE MOBILE MARKET SHARE (W/ PREFERENCE MENU)	MOBILE MARKET SHARE CHANGE (%, RELATIVE)	SCROLLED TO SEE OPTIONS (%)
U.S.	95.1%	75.8% ±1.5	-20%	84.8% ±1.3
U.K.	98.0%	76.1% ±1.5	-22%	86.9% ±1.2
Australia	98.3%	82.7% ±1.4	-16%	86.2% ±1.2

Of course, a change in Google mobile market share means a simultaneous change in non-Google mobile market share.

### Change in Non-Google Mobile Market Share

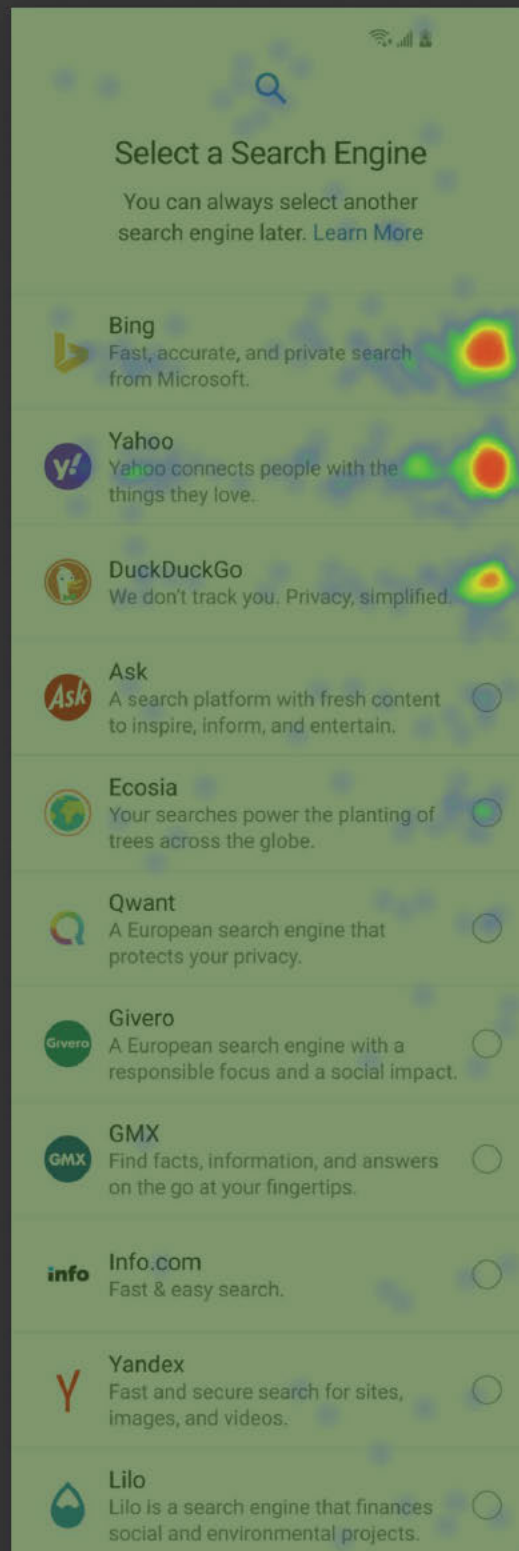
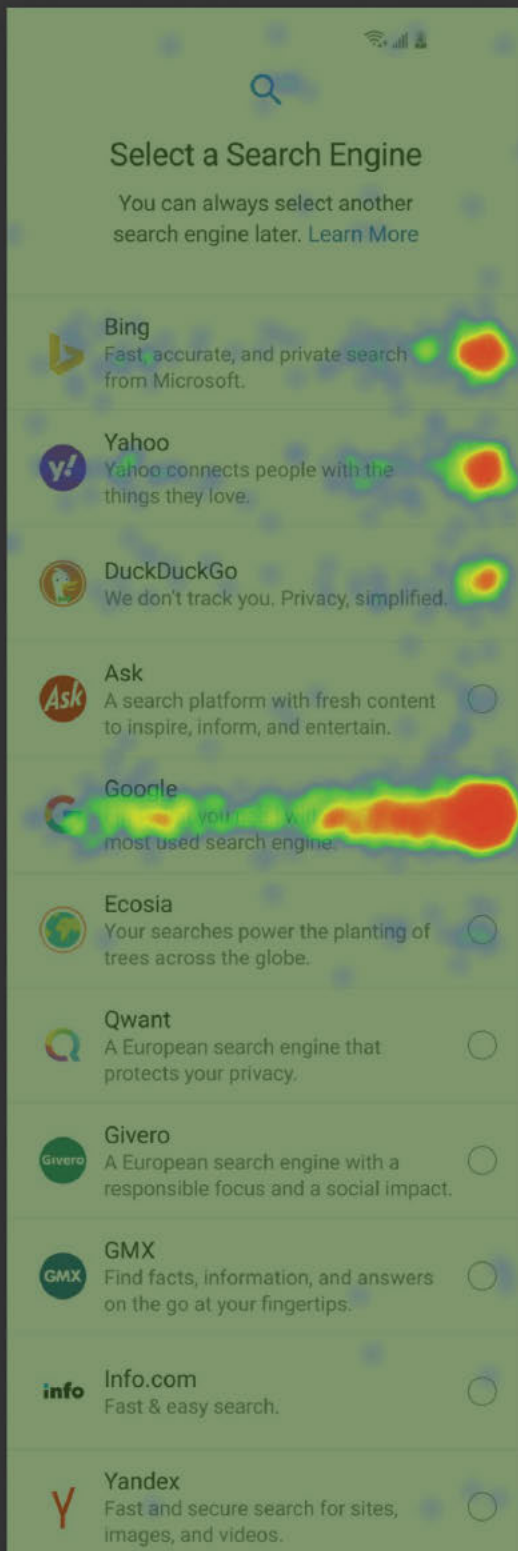
COUNTRY	NON-GOOGLE MOBILE MARKET SHARE (CURRENT)	NON-GOOGLE MOBILE MARKET SHARE (W/ PREFERENCE MENU)	MOBILE MARKET SHARE CHANGE (%, RELATIVE)	SCROLLED TO SEE OPTIONS (%)
U.S.	4.9%	24.2% ±1.5	+494%	84.8% ±1.3
U.K.	2.0%	23.9% ±1.5	+1195%	86.9% ±1.2
Australia	1.7%	17.3% ±1.4	+1018%	86.2% ±1.2

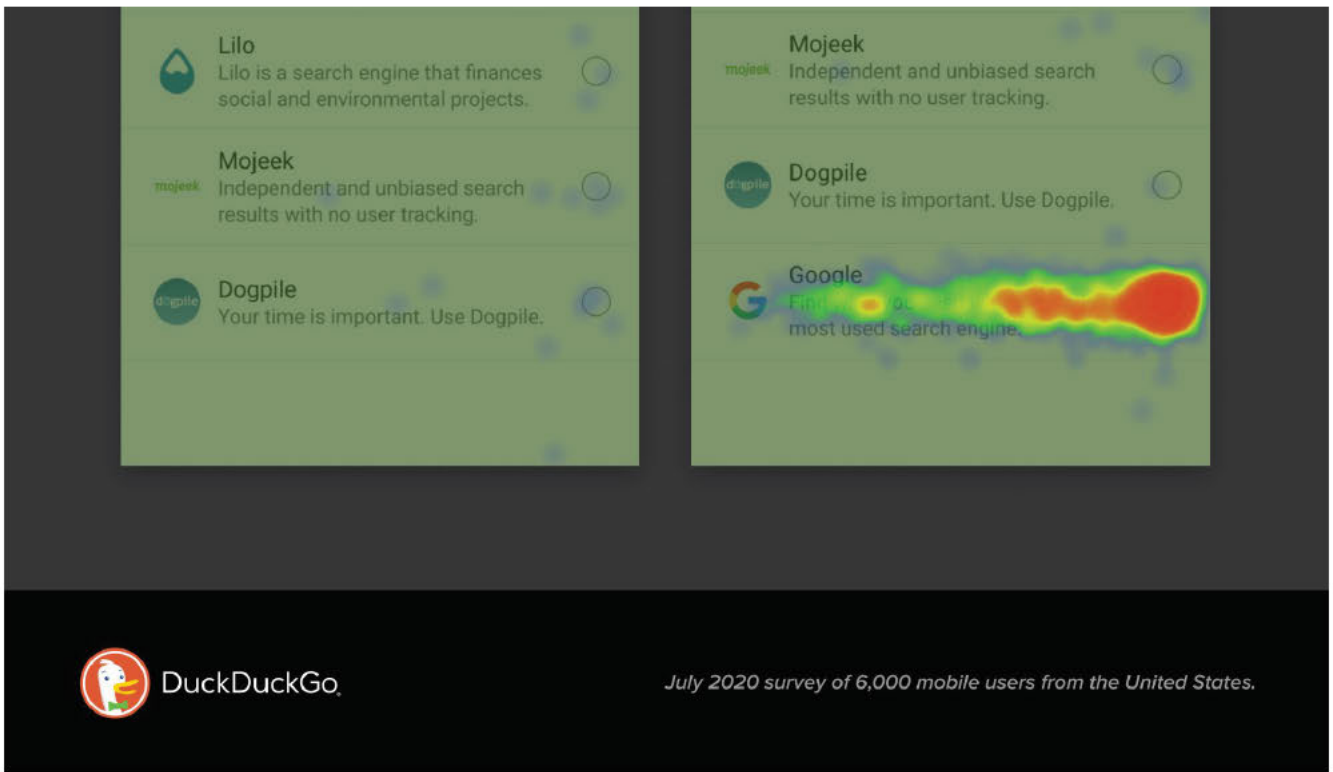
We tested the idea that user selection would change depending on which screen Google is on. Specifically, we also showed an additional 3,000 U.S. users a preference menu where Google was placed on the first screen. There was no statistically significant difference in how often users selected Google. This result agrees with our [last round](#) of user testing, reinforcing that Google can be placed on the last screen of any search preference menu, maximizing user interaction with search alternatives, and therefore raising the brand awareness of non-Google options in the process.

# User Preference Scrolling Behavior

## USER TESTING QUESTION

“Imagine you are setting up a new phone for the first time. Please follow the onscreen directions.”





In our proposal, the alternative search engines with the most market share in a given market are shown on the first screen, randomly ordered. The remaining alternative search engines are available by scrolling, randomly ordered. Google is placed on the last screen.

## Methodology

Results are based on live large-scale user testing of random samples of mobile device users sourced from [Cint](#) and conducted on [UsabilityHub](#). Respondents were paid but did not know the testing was paid for by DuckDuckGo. All reported results above are statistically significant at a confidence level of 95%.

---

*For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).*



# DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy newsletters.


- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or associated with anonymous searches.

— Spread Privacy —

## Privacy Research



Most Browser Tracking Protection Doesn't Actually Stop Tracking by Default, but We Can Help

---

As Predicted, Google's Search Preference Menu Eliminates DuckDuckGo

---

The Risky Business of Charging Your Phone in Public

---

[See all 17 posts →](#)





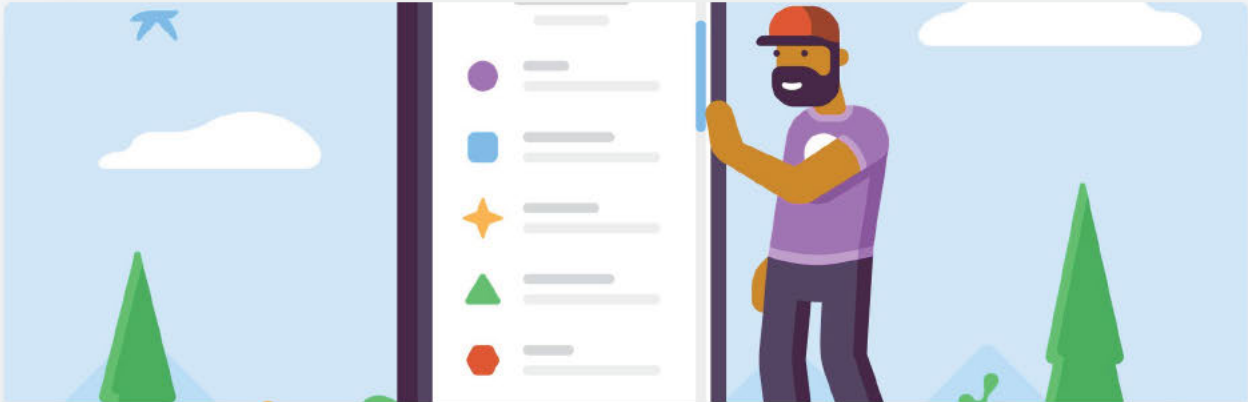
DUCKDUCKGO NEWS

## 2020 DuckDuckGo Charitable Donations: \$750,000 to Organizations Around the World

In our tenth year of charitable donations, our continued growth has enabled us to increase our donations to \$750,000.



4 MIN READ



OPINION

## Search Preference Menus: Google Auction Ignores Screen Size and Scrolling

New data showing that restricting the number of search engine options in search preference menus is unnecessary and harmful to competition.



4 MIN READ



[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# As Predicted, Google's Search Preference Menu Eliminates DuckDuckGo

FILED UNDER PRIVACY RESEARCH ON 28 SEP 2020



*This is the sixth in our [series of posts](#) about search preference menus.*

- The [Q4 2020 results](#) of Google's [search preference menu auction](#) have been released and, [as we predicted](#), DuckDuckGo has been eliminated in most countries.
- This EU antitrust remedy is only serving to further strengthen Google's dominance in mobile search by boxing out alternative search engines that consumers want to use and, for those search engines that remain, taking most of their profits from the preference menu.
- The auction model is [fundamentally flawed](#) and must be replaced.

## An Antitrust Remedy that Hurts Competition

As explained [in this series](#), we believe search preference menus — ones that change all search defaults and include the most common Google alternatives — can enable consumers to easily express their search preferences and significantly increase competition in the search market. Our most recent [large-sample user testing](#) shows that when a search preference menu is designed properly, then Google's search mobile market share could immediately drop by around 20% (with potentially greater market change shift over time).

However, Google's current search preference menu in the EU is not properly designed, evidenced by the just released [Q4 2020 auction results](#), listing which search engines will appear on the menu. DuckDuckGo, despite being the Google alternative that consumers [most want to select](#), will no longer appear in most countries. As a result, many EU residents buying a new Android device will no longer have an easy way to adopt a private search engine.

The central problem with Google's search preference menu is that it is a [pay-to-play auction](#) in which only the highest bidders are on the menu. This auction format incentivizes bidders to bid what they can expect to profit per user selection. The long-term result is that the participating Google alternatives must give most of their preference menu profits to Google! Google's auction further incentivizes search engines to be worse on privacy, to increase ads, and to not donate to good causes, because, if they do those things, then they could afford to bid higher.

### Why Was DuckDuckGo Eliminated?

Despite DuckDuckGo being robustly profitable since 2014, we have been priced out of this auction because we choose to not maximize our profits by exploiting our users. In practical terms, this means our commitment to privacy and a cleaner search experience translates into less money per search. This means we must bid less relative to other, profit-maximizing companies.



[We predicted](#) this outcome but chose to participate as long as we could since offering consumers an easy way to get simple privacy protection is more important than a boycott. We weren't eliminated sooner for two reasons. First, prices were temporarily depressed due to less bidders because we believe not all eligible companies submitted the initial paperwork on time to participate in early rounds. Second, we didn't have adequate data on auction outcomes and how it impacted our business until this round. With this information, we bid what is long-term sustainable, and we were eliminated.

## How to Make a Preference Menu that Works

There is a better way. Our [series of posts](#) on search preference menus explains in detail how to design one that actually empowers consumers and increases search competition. In our proposal, there is no auction. Alternative search engines with the most market share in each market are shown on the first screen, randomly ordered. The remaining alternative search engines are available by scrolling, also randomly ordered.

Our research shows that such a preference menu can be a great remedy. The European Commission should take action now and require Google to overhaul its preference menu design. The current remedy is not a remedy at all – it is fundamentally rigged by Google to benefit Google. The Commission has said they have been waiting on data to act: such data is now available. To expedite this process, we are sending the Commission our data that demonstrates exactly how the current process inevitably eliminates DuckDuckGo.

---

*For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).*



# DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy newsletters.


- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or associated with anonymous searches.

— Spread Privacy —

## Privacy Research



Most Browser Tracking Protection Doesn't Actually Stop Tracking by Default, but We Can Help

---

Google Search Mobile Market Share Likely to Drop Around 20% through Search Preference Menus

---

The Risky Business of Charging Your Phone in Public

---

[See all 17 posts →](#)





# GLOBAL PRIVACY CONTROL

DUCKDUCKGO NEWS

## DuckDuckGo Founding Member in Global Privacy Control (GPC) Standards Effort

We're proud to announce the launch of Global Privacy Control (GPC), a new standard to put privacy protection in the hands of consumers.



3 MIN READ



DUCKDUCKGO NEWS

## New in iOS 14: Simple Everyday Privacy with DuckDuckGo Privacy Browser

New in iOS 14, Apple now allows people to set certain browsers as the default browser (other than Safari), and DuckDuckGo Privacy Browser is now an approved default browser.



3 MIN READ

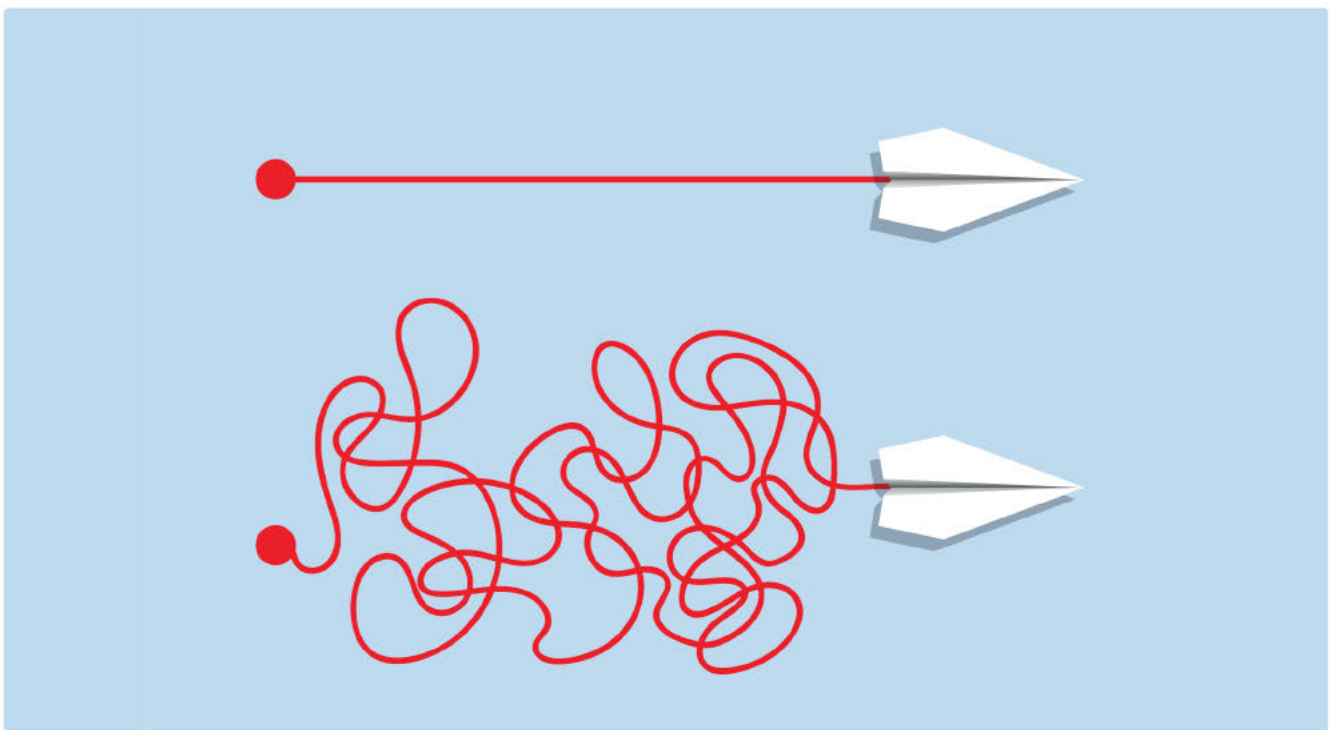
Spread Privacy © 2021

[Latest Posts](#) . [Twitter](#) . [Reddit](#) . [Privacy Crash Course](#) . [About DuckDuckGo](#)

[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Dear Google: We Agree Search Competition Should Be "Only 1 Click Away" – So Why Is It 15+ on Android?

FILED UNDER OPINION ON 14 OCT 2020



This is the seventh in our [series of posts](#) about search preference menus.

Dear Google, one of the most repeated lines you've used to fend off antitrust inquiries is to say search competition is "[only one click away](#)." The recent [House Antitrust Subcommittee report](#) notes that "in an internal presentation about [Microsoft] Internet Explorer's default search selection, Google *recommended that users be given an initial opportunity to select a search engine* and that browsers *minimize the steps required to change the default search provider*." Finally, something we can agree on!

So, Google, given that you've often said competition is one click away, and you're

aware a complicated process suppresses competition, why does it take fifteen+ clicks to make DuckDuckGo Search or any other alternative the default on Android devices? Google search is made the default on Android devices in two ways, through

the home screen search bar and default browser. Here is how someone can change both:

1. Open Google Play
2. Search "DuckDuckGo" (technically at least three clicks)
3. Tap *DuckDuckGo Privacy Browser*
4. Tap *Install*
5. Navigate to the DuckDuckGo icon
6. Long-press the DuckDuckGo icon
7. Tap the widgets icon
8. Long-press the widget and place on home screen
9. Long-press the Google widget
10. Tap *Remove* (process may differ and doesn't work on all devices, e.g., Google Pixel phones – go figure!)

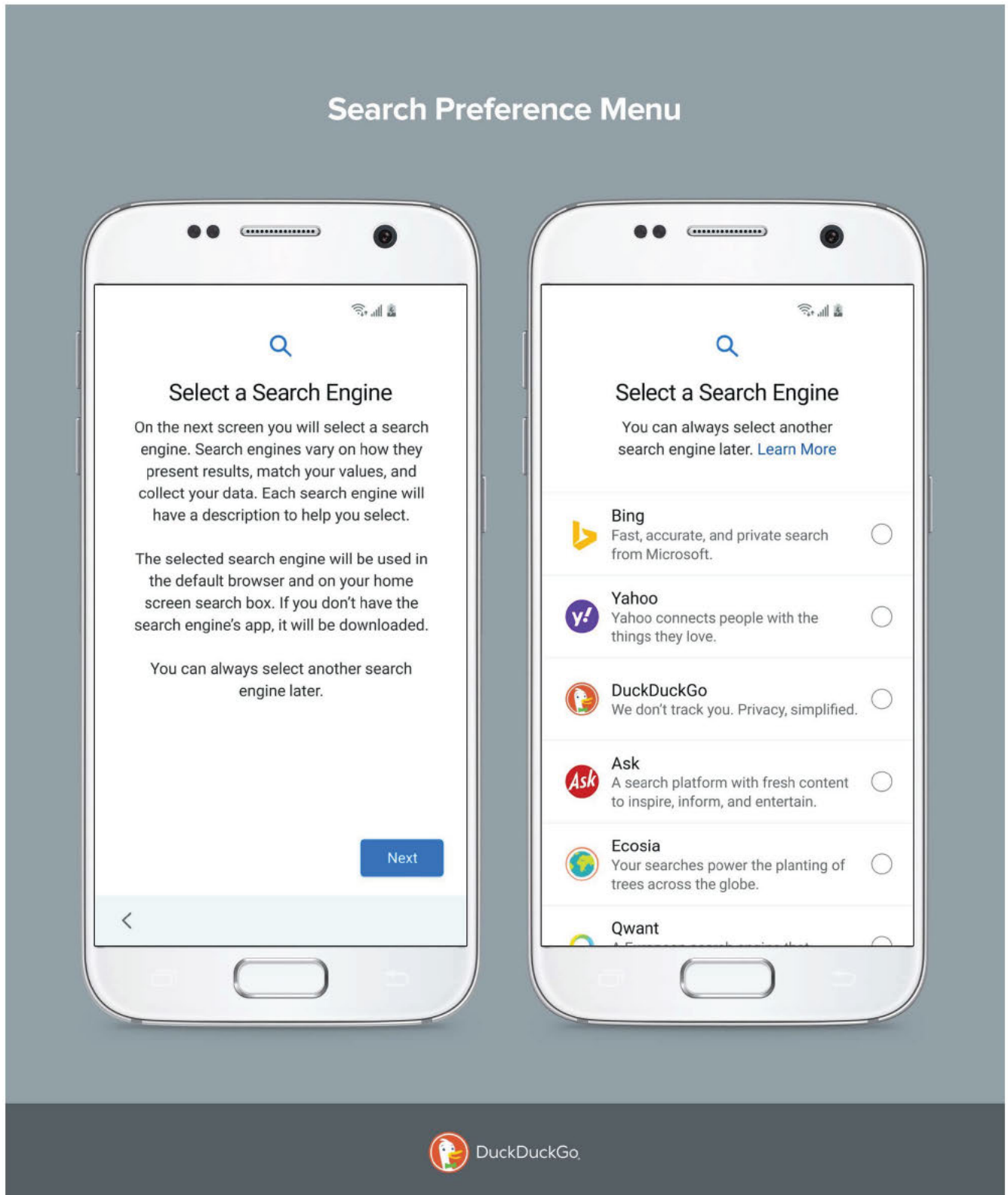
Now you need to either make DuckDuckGo your default browser or make DuckDuckGo your default search engine in your preferred browser. Similar number of steps in either case, but we'll do the former since it is much better for privacy.

11. Open *Settings*
12. Search "browser" (technically at least two clicks)
13. Tap *Default browser app*
14. Tap *DuckDuckGo*
15. Tap *Home*

This long process puts unnecessary roadblocks in the way of people getting to use the service they want. Right now there is no global device search setting on Android,

which is why this is so many steps. However, it doesn't have to be this way. Switching default search engines can and should be one click via a properly designed search preference menu that users see automatically on device setup and can be sent back to in Settings (also in one click).

Given your stance on one-click competition, Google, will you commit to allowing consumers to select their preferred search engine in one click?



DuckDuckGo.

CONSUMERS ARE TIED UP WITH DARK PATTERNS AND OTHER TECHNOLOGY ABUSES. [STUDY](#) AND [STUDY](#) shows the vast majority of people want more privacy online, and at least [20% of people](#) would pick a search engine other than Google if presented with the above search preference menu. Google, please stop using your dominance in a non-search market (e.g., via Android and Chrome) to further your dominance in the search market, and let consumers pick their default search engine in actually only one click.

For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).



## DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy newsletters.

- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or associated with anonymous searches.

— Spread Privacy —

# Opinion



Search Preference Menus: Google Auction Ignores Screen Size and Scrolling

Working from Home? Consider These Privacy-Focused Tools

Working Remotely for the First Time? Here Are 5 Tips From Our All-Remote Team

See all 12 posts →



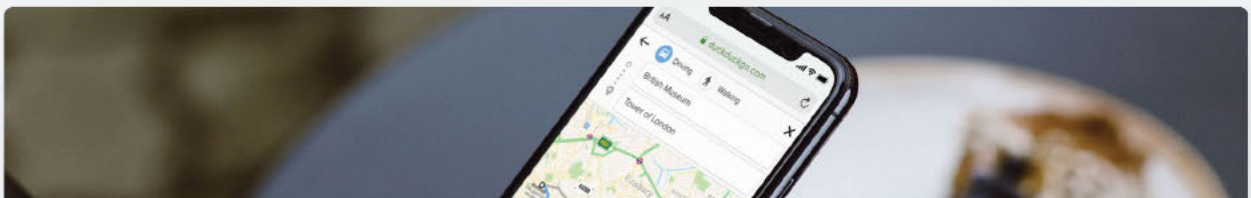
DUCKDUCKGO NEWS

## Open Letter to European Commission: Request for Trilateral Meeting among Google, the EC, and Alternative Search Engines to Improve Search Preference Menu

We're calling for a trilateral meeting among Google, the European Commission, and alternative search engines to address the many flaws in Google's preference menu for Android phones in the EU.



1 MIN READ







DUCKDUCKGO NEWS

## Plan Your Route Privately: DuckDuckGo Now Has Driving & Walking Directions

We're excited to announce a big step forward with the introduction of route-planning directions on DuckDuckGo Search – private, as always.



2 MIN READ

Spread Privacy © 2021

[Latest Posts](#) . [Twitter](#) . [Reddit](#) . [Privacy Crash Course](#) . [About DuckDuckGo](#)

[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Open Letter to European Commission: Request for Trilateral Meeting among Google, the EC, and Alternative Search Engines to Improve Search Preference Menu

FILED UNDER DUCKDUCKGO NEWS ON 27 OCT 2020



*This is the eighth in our [series of posts](#) about search preference menus.*

Today we are requesting a trilateral meeting among Google, the European Commission, and alternative search engines to improve [the search preference menu](#) displayed to consumers when they activate Android phones in the European Union. We have conducted extensive research on flaws in this preference menu and believe our insights can ensure Google and the European Commission implement an effective remedy to correct Google's anticompetitive conduct as established in the [Commission's Android case](#).

October 27, 2020

RE: Request for Trilateral Meeting among Google, the European Commission, and  
Alternative Search Engines to Improve Search Preference Menu  
(Google Android 40099)

Dear Executive Vice President Vestager,

We are companies operating search engines that compete against Google. As you know, we are deeply dissatisfied with the so-called remedy created by Google to address the adverse effects of its anticompetitive conduct in the Android case. We understand that Google regularly updates you regarding its pay-to-play auction, but it appears that you may not be receiving complete or accurate information.

We are writing to request a trilateral meeting with your office, ourselves, and Google, with the goal of establishing an effective preference menu. Our respective designees could work in advance to create a tight agenda for this meeting to ensure it is productive and collaborative.

We are heartfelt supporters of the Commission's ambition to remediate entrenched Google competition harms. We are asking to put these intentions into practice now, making full use of your existing tools.

Thank you in advance for your consideration.

Yours sincerely,

DuckDuckGo

*United States*

Ecosia

*Germany*

[Lilo](#)

France

[Qwant](#)

France

[Seznam](#)

Czech Republic

You can download the [PDF version of this letter here](#). (Note: Currently waiting for upload)



## DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy newsletters.

Your email address

- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or associated with anonymous searches.

— Spread Privacy —

# DuckDuckGo News

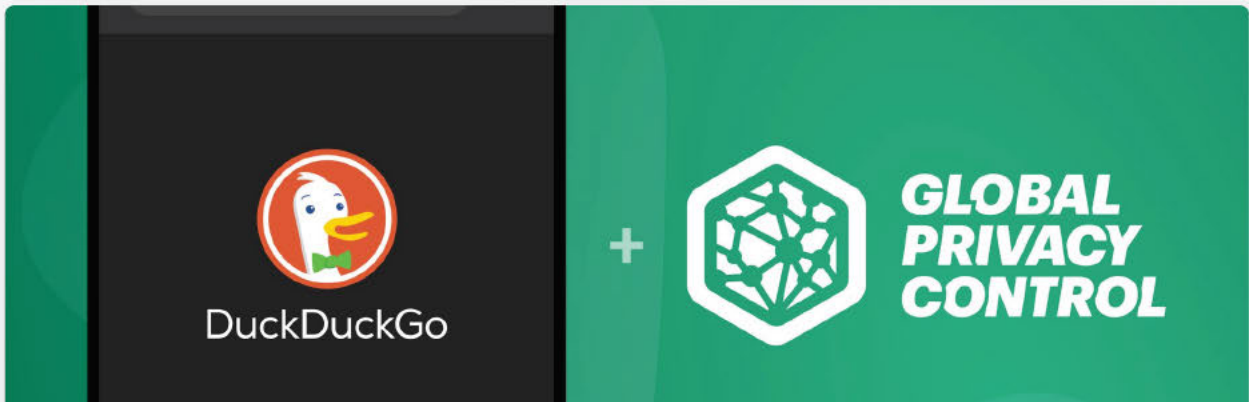


Use the DuckDuckGo Extension to Block FLoC, Google's New Tracking Method in Chrome

Global Privacy Control (GPC) Enabled by Default in DuckDuckGo Apps & Extensions

Plan Your Route Privately: DuckDuckGo Now Has Driving & Walking Directions

[See all 29 posts →](#)



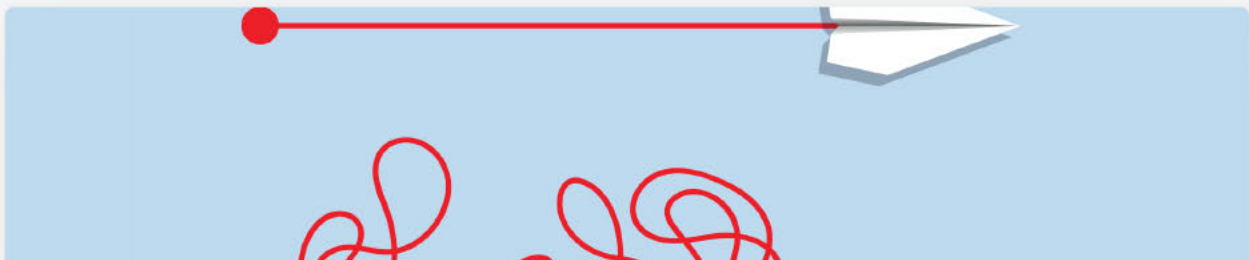
DUCKDUCKGO NEWS

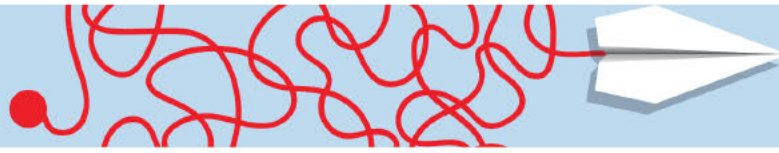
## Global Privacy Control (GPC) Enabled by Default in DuckDuckGo Apps & Extensions

Global Privacy Control (GPC), the setting exercising your legal right to opt-out of the sale & sharing of personal data, is now enabled by default in the DuckDuckGo app & extension.



3 MIN READ





OPINION

## Dear Google: We Agree Search Competition Should Be "Only 1 Click Away" – So Why Is It 15+ on Android?

Google claims search competition is "only one click away." So why does it take fifteen+ clicks to make DuckDuckGo Search or any other alternative the default on Android devices?



2 MIN READ

Spread Privacy © 2021

[Latest Posts](#) , [Twitter](#) , [Reddit](#) , [Privacy Crash Course](#) , [About DuckDuckGo](#)



**DuckDuckGo is the Internet privacy company for everyone who has had enough of hidden online tracking and wants to take back their privacy now.** With a small headquarters in Paoli, Pennsylvania, our 100+ member team is fully distributed across 21 US states, the District of Columbia, and 19 countries.

**Our vision is to raise the standard of trust online. Respecting privacy must become the default, not the exception.**

Every day, millions of people rely on our free all-in-one solution to stay private online. With one download of the DuckDuckGo Privacy Browser for mobile or the Privacy Essentials browser extension for desktop, we offer seamless protection that includes:

- **A private search engine that does not collect, share, or sell your data.**
- **Tracker blocking technology that shields you from the most prevalent hidden trackers.**
- **Automatic upgrades of website domains to HTTPS connections when available.**

**In one download, we deliver privacy, *simplified*.**

Every year for the last 10 years, DuckDuckGo has experienced exponential growth, spurred by the public's growing demand for privacy. Our users cut across every demographic and political affiliation.

SEARCH ENGINE MARKET SHARE

	United States	United Kingdom	Germany	Canada	Netherlands	Australia
DuckDuckGo	2.4%	1%	0.9%	1.1%	0.9%	0.9%
Google	88.1%	92.6%	90.5%	92.1%	94.6%	94.1%
Bing	6.2%	5%	6.1%	4.8%	3.1%	4%
Yahoo	3%	1.3%	1%	1.6%	0.6%	0.7%

**i** Source, Statcounter Feb. 2021. To protect users' privacy, DuckDuckGo's mobile browser and browser extension block Statcounter's tracking code. As a result, this chart understates DuckDuckGo's market share.

QUICK FACTS



**Established in 2008.**



**Over 50M downloads in year 2020.**



**2.5B+ queries a month and over 100M per day.**



**4th largest search in the US, 2nd largest on mobile.**



**Profitable since 2014 without collecting users' personal data. Our business model is contextual advertising.**

**i** Contextual advertising is based on the context of the page (e.g., generated from your search terms), as opposed to **behavioral advertising**, which is based on detailed profiling about you as a person.

## Google started with the same business model as DuckDuckGo.

- But over the years, Google has morphed into a very different company, one that tracks you all over the Internet, gobbling up your online activity, choking off potential competitors, and engaging in privacy-washing.
- Correcting Google's monopoly and advancing privacy rights benefits everyone. The same data profiles collected for commercial exploitation are also used to trap people in filter bubbles, bombard them with discriminatory ads, and manipulate their emotions.
- Working collaboratively with governmental institutions, we can redress privacy harms, buttress democratic values, foster competitive markets, and spur innovation.

### Katie McInnis

Senior Public Policy  
Manager US

[kmcinnis@duckduckgo.com](mailto:kmcinnis@duckduckgo.com)

### Aurélien Mähl

Senior Public Policy  
Manager Europe

[amaehl@duckduckgo.com](mailto:amaehl@duckduckgo.com)

### Megan Gray

General Counsel &  
Vice President, Public Policy

[megan@duckduckgo.com](mailto:megan@duckduckgo.com)



Get the latest news for all things related to privacy with our short weekly newsletter <https://duckduckgo.com/newsletter>.

*Your email address will not be shared, spammed, or linked to your search or surf activity.*

Europe's Antitrust Push Against Google Hasn't Dented Its Heft. Can the U.S.?

**THE WALL STREET JOURNAL**

<https://www.wsj.com/articles/europes-antitrust-push-against-st-google-hasnt-dented-its-heft-can-the-u-s-11603293443>

Google got rich from your data. DuckDuckGo is fighting back.

**WIRED**

<https://www.wired.co.uk/article/duckduckgo-android-choice-screen-search>

A Feisty Google Adversary Tests How Much People Care About Privacy

**The New York Times**

<https://www.nytimes.com/2019/07/15/technology/duckduckgo-private-search.html>

Google rival's study urges letting mobile users pick search defaults

**AXIOS**

<https://www.axios.com/google-rivals-study-urges-letting-mobile-users-pick-search-defaults-9e44d6bc-2380-41dc-b7f9-ffefdad602d9.html>



# WHITE PAPER ON THE SEARCH ENGINE MARKET

## FEATURES AND COMPETITIVE LANDSCAPE | MARCH 2021

### ABSTRACT

DuckDuckGo is a privacy technology company that helps consumers stay more private online. DuckDuckGo has been competing in the search engine market since 2008, and it is currently the 4th largest search engine across North America and Europe. From the vantage point of a company vigorously trying to compete, DuckDuckGo can hopefully provide useful background on the search engine market.

Among the many search engines that exist, Google and Microsoft (Bing) are the only ones to own a fully independent infrastructure for globally indexing the web and providing an ad feed. Other global search engines, including DuckDuckGo, syndicate part of their search results and ads from either Google or Microsoft. A few other companies operate analogous regional infrastructure, such as in China and Russia.

To appeal to consumers, a search engine needs to provide high-quality search features in addition to organic web links, such as instant answers, images, maps, and news, not all of which can be syndicated from the major search engines. Put another way, to be competitive, a search engine needs its own technology to incorporate all these features and ensure they appear at the right times.

Three options exist for getting users to adopt a particular search engine: (1) be the default search engine on web browsers (which is massively expensive); (2) be the default on a browser developed by the search engine itself, like DuckDuckGo has done on mobile; (3) convince consumers to change their default settings (which may not even be possible on certain platforms). Preference menus, where consumers are able to select their default search engine, are well-suited for the search engine market because most browsers and operating systems are already controlled by search engine parent companies.

Measuring search engine market share is challenging because comprehensive and objective data sets are not readily available. For example, DuckDuckGo, as an all-in-one privacy solution, blocks trackers in its apps and extensions, including measurement tags used by market research firms. To measure market share, governments need to combine log data directly sourced from a wide sample of appropriately selected websites.

## CONTENTS

I.	Features of Competitive Search Engines.....	2
	Organic web links and high-quality search features .....	2
	Click-and-query data.....	4
	Indexing the web.....	4
II.	Monetization of Competitive Search Engines .....	6
III.	Getting Consumers to Adopt a Particular Search Engine: The Power of Defaults.....	7
	Three options for getting consumers to adopt a search engine .....	7
	Remediating Google’s default dominance .....	8
IV.	Search Engine Market Share .....	10
	Publisher data better measures market share .....	10
	A snapshot of search engine market share .....	10
V.	Conclusion.....	11
VI.	Contacts .....	11

### I. FEATURES OF COMPETITIVE SEARCH ENGINES

#### ***ORGANIC WEB LINKS AND HIGH-QUALITY SEARCH FEATURES***

A competitive search engine must offer a set of high-quality search features, and ensure they are shown at the right times. The set of mandatory high-quality search features includes:

- An up-to-date index of most web pages on the Internet (referred to as “organic web links”)
- Maps
- Local business answers (e.g., restaurant addresses and phone numbers)
- News
- Images
- Videos
- Products/shopping
- Definitions
- Wikipedia reference
- Quick answers (calculator, conversions, etc.)



Additional features may also be necessary to be competitive with particular consumer segments, such as:

- Sports scores
- Airplane flight information
- Question/Answer reference (e.g., for computer programming)
- Lyrics
- Stocks
- Recipes

When DuckDuckGo launched in 2008, not all of these features were required for successful search engines, and arguably just one item was mandatory: organic web links (sometimes referred to as “the ten blue links”). Over time, online search innovated, and consumers came to expect the other features (often referred to collectively as “instant answers,” “one boxes,” or “info boxes”). The trend toward instant answers is likely to continue because they more quickly get information to consumers.<sup>1</sup>

Another reason for the increasing use of instant answers is the rise of smartphones, which now generate the majority of online searches.<sup>2</sup> On non-desktop/laptop devices, consumer website navigation is more difficult, making instant answers intrinsically more useful.

Nonetheless, organic web links continue to be a required feature. Despite their decreased importance, the financial outlay necessary to create and maintain those organic links has increased many-fold since 2008. The additional expense is because the web itself has grown so expansive.

One barrier for a startup search engine trying to generate useful organic web links (in addition to cost) is that many sites outright block the main tool for collecting organic web links: the link “crawler.” This block excludes already established crawlers such as the Google link crawler. Both small and large websites embed this blocking code.<sup>3</sup> Some sites incorporate the blocking code because they have legitimate reasons to reduce the associated bandwidth costs. A December 2020 New York Times article explained that “websites often provide greater and more frequent access to Google’s so-called web

---

<sup>1</sup> DuckDuckGo incorporates content from approximately 400 sources, see <https://help.duckduckgo.com/duckduckgo-help-pages/results/sources/>. SparkToro adds perspective on these trends: <https://sparktoro.com/blog/how-much-of-googles-search-traffic-is-left-for-anyone-but-themselves/> and <https://sparktoro.com/blog/google-ctr-in-2018-paid-organic-no-click-searches/>

<sup>2</sup> Search Engine Land, May 5, 2015, *It’s Official: Google Says More Searches Now On Mobile Than On Desktop* <https://searchengineland.com/its-official-google-says-more-searches-now-on-mobile-than-on-desktop-220369>

<sup>3</sup> See for instance Facebook’s blocking code: <https://facebook.com/robots.txt>

*crawlers — computers that automatically scour the internet and scan web pages — allowing the company to offer a more extensive and up-to-date index of what is available on the Internet.”<sup>4</sup>*

### ***CLICK-AND-QUERY DATA***

Another barrier facing a startup search engine is that it needs data, such as the most commonly clicked links for a particular query, in order to produce a useful ranking of organic web links, i.e., what link is displayed first, second, etc. For any given search query (e.g., “how to make cold brew coffee”), data specific to that query helps inform ranking decisions,<sup>5</sup> although once a search engine has enough users consistently searching that specific query, having even more users do so provides little benefit. That is, network effects exist for search result ranking, but that network effect quickly dissipates once a critical mass of searches regularly occurs for that query. However, many of the queries that a search engine receives each day will be ones that the search engine has never previously seen, and those queries by definition will not have reached needed critical mass. As a search engine’s market share grows, the percentage of new searches on that search engine will diminish, but not to zero. Even at Google’s scale, approximately 15% of Google searches each day are ones that Google has never before encountered.<sup>6</sup>

### ***INDEXING THE WEB***

In the mid-2000s, many search engines crawled the web, producing indexes of organic web links, including many search engine startups and the by-then well-established search engines. Now all of those web-crawling search engine startups are defunct. In recent years, two new entrants attempted to create an index from scratch: FindX (from Denmark) and Cliqz (from Germany). Both went out of business due to the insurmountable barriers to entry.<sup>7</sup>

Today, only Google and Microsoft still produce competitive organic web link indexes. In some countries, a local player may hold a competitive position in producing organic web link indexes in the

---

<sup>4</sup> The New York Times, December 14, 2020, Daisuke Wakabayashi: “*Google Dominates Thanks to an Unrivaled View of the Web.*” <https://www.nytimes.com/2020/12/14/technology/how-google-dominates.html>

<sup>5</sup> Search Engine Land, September 15, 2020, *8 major Google ranking factors — SEO guide* <https://searchengineland.com/8-major-google-ranking-signals-2017-278450>

<sup>6</sup> Search Engine Land, April 25, 2017, *Google reaffirms 15% of searches are new, never been searched before* <https://searchengineland.com/google-reaffirms-15-searches-new-never-searched-273786>

<sup>7</sup> In its farewell message, FindX wrote that “Findx search index was incomplete and was not able to return results that were likely both relevant and good quality” because large websites block independent trackers. In a similar spirit, Cliqz wrote that it “failed to reach a scale that would allow our search engine to be self-financing.”



local language, such as in China (Baidu) and Russia (Yandex). As a result, other competitive search engines including Yahoo and DuckDuckGo must license the Google or Microsoft organic web links.

Yahoo and DuckDuckGo (and any other search engines hoping to be competitive in the search engine market) sign search syndication contracts with Google and/or Microsoft to purchase their organic web links. In exchange, the purchasing company agrees to show search ads next to the organic web links. The parties split the revenue generated by the search ads (according to percentages stated in the contract). In these syndication arrangements, the company providing the organic web links/search ads is called the “upstream provider” and the company receiving them is called the “downstream provider.”

While only Google and Microsoft produce the organic web links, their syndication contracts can authorize sub-syndication, which entails a second revenue-sharing contract. Yahoo (now owned by Verizon) historically had its own organic web links. But since 2009, Yahoo has purchased its organic web links from Microsoft.<sup>8</sup> Microsoft is currently the primary source of organic web links (and the associated ad feed) for most search engines trying to compete in the search engine market (e.g., Bing, Yahoo, DuckDuckGo, AOL, Ecosia, Qwant, etc.).

Although Google, Bing, Yahoo, DuckDuckGo, and Ecosia are currently considered to be the only notable competitors in the search engine market across North America and Europe, many other syndication and sub-syndication “search engines” exist. Most are not generally considered part of the search engine market, however, because they lack the required set of features described above. Examples include Internet Service Providers (which display search results on a customer start page and when the customer misspells domain names; see for example [search.xfinity.com](http://search.xfinity.com)), arbitrage players (which buy clicks or app installs and then send traffic to search result pages almost entirely comprised of ads; see for example [ask.com](http://ask.com)), and vertical sites (which only provide niche search responses, see for example [yelp.com](http://yelp.com)).

Without a syndication contract with either Google or Microsoft or a sub-syndication contract with Verizon or another sub-syndicator, a company has no viable monetization path (see next section). The company can purchase access to Microsoft’s organic web link index via a simple online cloud signup,

---

<sup>8</sup> CNN Money, July 29, 2009, *Microsoft and Yahoo: Search partners*, [https://money.cnn.com/2009/07/29/technology/microsoft\\_yahoo/](https://money.cnn.com/2009/07/29/technology/microsoft_yahoo/)



but that does not incorporate the ad feed.<sup>9</sup> Even with a syndication contract, a company may face growth challenges associated with the terms and conditions of the contract.<sup>10</sup>

## II. MONETIZATION OF COMPETITIVE SEARCH ENGINES

The vast majority of search engines are free to consumers and monetize with ads. The search engine tries to show ads that are relevant to that search query (if the ads are not relevant, consumers will not click on them, and those clicks generate the advertising revenue on which the company relies.). Only two companies (again, Google and Microsoft) have an online advertising business that provides search ads of any significant scale (over half a million advertisers).<sup>11</sup> Similar to the organic web links, operating a search ads service at this scale is extremely costly, requiring massive resources for the sales network, support staff, and technology platform.

Also similar to organic web links, search ads benefit from network effects because ad pricing is based on an auction model. That is, search ads sell for a higher price when more advertisers are bidding for a given keyword, e.g., multiple bidders for the keyword “coffee.” To maximize bidders and therefore revenue, search ad suppliers are driven to merge, which happened gradually over time with #3 Yahoo/Verizon and #2 Bing/Microsoft, culminating in the 2019 announcement that Bing would thereafter operate all of Yahoo’s search ads.<sup>12</sup> Of the two remaining competitive search ad services (Google and Microsoft), Google has a larger advertiser base, and so is able to generate greater advertising revenue per search.

An aspiring search engine startup could attempt to earn money without the Google or Microsoft search ads, such as only showing product ads from companies like Amazon or travel ads from companies like Booking.com. However, these alternatives are not sufficiently lucrative to cover the costs of purchasing organic web links. In short, an aspiring search engine startup today (and in the foreseeable future) cannot avoid the need to sign a search syndication contract.

---

<sup>9</sup> <https://azure.microsoft.com/en-us/pricing/details/cognitive-services/search-api/>

<sup>10</sup> UK Competition and Markets Authority, July 1, 2020, *Online platforms and digital advertising, Market study final report*, pp. 96-98 – [Link to the report](#)

<sup>11</sup> <https://about.ads.microsoft.com/en-us/blog/post/april-2019/bing-ads-is-now-microsoft-advertising>

<sup>12</sup> <https://about.ads.microsoft.com/en-us/blog/post/january-2019/microsoft-and-verizon-media-strengthen-search-partnership>

### III. GETTING CONSUMERS TO ADOPT A PARTICULAR SEARCH ENGINE: THE POWER OF DEFAULTS

#### *THREE OPTIONS FOR GETTING CONSUMERS TO ADOPT A SEARCH ENGINE*

To get consumers to adopt a particular search engine, three options exist.

- **Option One:** The first option is to be **the default search engine on web browsers**. In this situation, when a consumer starts using a web browser (either when setting up a new device or after installing the browser), that browser is already configured for the particular search engine.

Unfortunately for startup search engines, default search placement is not a practical option because the primary browsers are either already owned by a major search engine parent company (Chrome/Google, Edge/Microsoft, Internet Explorer/Microsoft) or charge hundreds of millions to billions of dollars for such placement (Safari,<sup>13</sup> Firefox,<sup>14</sup> Samsung<sup>15</sup>). Browser market share globally is 63.5% Chrome (owned by Google), 19.5% Safari (owned by Apple), 3.7% Firefox (owned by Mozilla), 3.5% Samsung, 3.2% Edge (owned by Microsoft), and approximately 6.5% by many small players.<sup>16</sup> We explore below how to address this market challenge.

- **Option Two:** The second option is for **the search engine company to develop its own browser** and gain market share via that browser's adoption. For example, DuckDuckGo developed its own browser for Android and iOS. However, the same default placement challenges exist in the browser market, just one level up – with the device makers requiring millions or billions of dollars to become a default browser on a device.
- **Option Three:** The third option is **to convince consumers to change their default settings**, either manually or by downloading software that helps them to do that. Consumers must be highly motivated to take these steps, which vary in complexity from device to device and browser to browser. Even with a competitive differentiator like privacy, consumers are extremely reluctant to take such action because it can be technically challenging and time-consuming. On devices with the Android operating system, it takes over 15 clicks to change the search default

---

<sup>13</sup> Lisa Marie Segarra, *Google to Pay Apple \$12 Billion to Remain Safari's Default Search Engine in 2019: Report*, Fortune (Sept. 29, 2018), <https://fortune.com/2018/09/29/google-apple-safari-search-engine/>

<sup>14</sup> <https://www.cnet.com/news/google-firefox-search-deal-gives-mozilla-more-money-to-push-privacy/>

<sup>15</sup> <http://www.theinvestor.co.kr/view.php?ud=20170816000718>

<sup>16</sup> StatCounter, *Browser Market Share Worldwide*, January 2021, <https://gs.statcounter.com/browser-market-share>



on the home screen search bar as well as the default browser and search app.<sup>17</sup> Moreover, even when the consumer is convinced to take that action, it can be only a temporary change – the consumer’s device and browser are often configured to roll back the search engine selection (e.g., with software updates) or nudge the consumer into doing so.

### ***REMIEDIATING GOOGLE’S DEFAULT DOMINANCE***

The dominant player in the search engine market, Google, also owns the dominant browser (Chrome) and the dominant mobile operating system (Android). The mobile operating system and browser are two essential ways that users access the Internet – and when Google does not control these ‘gateways’ to the Internet, it invests billions to buy default settings. The US Department of Justice, in its antitrust complaint against Google, stated that “Google pays Apple billions of dollars in advertising revenue each year, with public estimates ranging around \$8–12 billion.”<sup>18</sup>

In its 2018 Android decision, the European Commission sanctioned Google for abusively tying its Google Search app and its Chrome browser with the Android Play Store, in conjunction with setting Google Search as default on Chrome. It concluded that the tying “*helps to maintain and strengthen Google’s dominant position (...) in general search services, increases barriers to entry, deters innovation and tends to harm, directly or indirectly, consumers.*”<sup>19</sup>

A powerful way to correct default dominance is to present users with a preference menu for selecting a search engine on their device or browser. The Russian competition authority required Google to give users such a menu on both existing and new Android devices in 2017.<sup>20</sup> Subsequently, Russian search engine Yandex reported a 10% increase in market share on Android devices.<sup>21</sup>

The Commission’s decision, unfortunately, did not mandate a preference menu. The Commission only required Google to untie – specifically, Google had to cease bundling the Google Chrome browser and

---

<sup>17</sup> DuckDuckGo’s SpreadPrivacy blog, October 14, 2020: *Dear Google: We Agree Search Competition Should Be “Only 1 Click Away” – So Why Is It 15+ on Android?* <https://spreadprivacy.com/one-click-away/>

<sup>18</sup> Press release and court complaint from October 20, 2020 available [on DOJ website](#).

<sup>19</sup> Case 40099, ‘Google Android’, see [official case page](#) on the European Commission’s website, paragraph (773), p. 168

<sup>20</sup> <https://www.reuters.com/article/us-tmt-conference-yandex/yandex-aims-for-50-percent-mobile-search-share-in-russia-cfo-idUSKBN1DG379> and <https://russiansearchmarketing.com/yandex-catches-google-on-android-in-russia>

<sup>21</sup> <https://russiansearchmarketing.com/yandex-search-market-share-increase-during-q3> and <https://www.fool.com/investing/2018/09/07/yandex-overtakes-google-as-russias-top-search-engi.aspx>



Google Search with the Google Play Store on Android devices sold in Europe. The Commission order did not specifically set forth remedial requirements beyond the untying component. Predictably, Google implemented a self-serving remediation plan – a Google-designed search preference menu, applicable only for Android devices certified by Google after March 2020.

Google’s preference menu uses dark patterns and a per-selection auction-based mechanism to incentivize consumers to retain Google and reject search engines with alternative business models (like privacy-first DuckDuckGo and tree-planting Ecosia). For example, Google displays the preference menu only once (the user cannot get back to the menu unless he resets the whole device to factory settings). DuckDuckGo published a series of posts, backed by extensive user testing, detailing the flaws of Google’s preference menu and proposing a pro-competitive consumer choice architecture.<sup>22</sup>

Google’s auction mechanism is particularly troubling because it imposes false scarcity (only three search engine alternatives are displayed despite the fact that many more alternatives can fit on the screen). Moreover, Google’s auction means alternative search engines will inevitably bid their profit per user selection, which results in Google taking all their preference menu profits.

In addition, because search engines pay Google for every user selection, this system favors search engines that maximize revenue per user, for instance through intrusive ads or misleading marketing claims. As a result, search engines that are disfavored by consumers are the ones who “win” the auction (for example, a German telecom provider, a Puerto Rican shell company). According to download numbers and ratings in the Google Play Store, consumers do not consider them real search engines; even Google itself does not list these pseudo search engine alternatives as options in Google Chrome settings (distinct from the preference menu).<sup>23</sup> While the preference menu can and should be a place where new search engines can introduce themselves to consumers, the preference menu should include all the search engines that consumers expect to be there.

Ironically, Google’s distorted preference menu further entrenches Google’s search dominance by reinforcing the widespread misperception that Google is the only legitimate search engine. Needless to say, search engine market share in the EU has not diversified at all since Google’s introduction of the preference menu.

---

<sup>22</sup> <https://spreadprivacy.com/preference>

<sup>23</sup> *Choice Screen Auctions*, Professor Michael Ostrovsky, Stanford University, November 7, 2020. <https://web.stanford.edu/~ost/papers/csa.pdf>

## IV. SEARCH ENGINE MARKET SHARE

### *PUBLISHER DATA BETTER MEASURES MARKET SHARE*

Confusion exists around search engine market share because common data sources vary significantly and no public source is accurate. The oft-cited source of comScore and, to a lesser but still significant extent, StatCounter, have significant deficiencies.

comScore’s panel-centric approach means that its dataset suffers from a fundamental methodological issue: selection bias. The people in the panel are not representative of the online population. For example, DuckDuckGo users, who almost by definition value their privacy, are not likely to participate in a panel that surveils their online activity. Additionally, comScore excludes mobile searches, ignoring the largest increase in search traffic since the 2007 introduction of the iPhone.<sup>24</sup> Thus, the proportion of devices in the panel does not match the proportion used by the general population. comScore also hasn’t added any new search engines to its list in over a decade, failing to capture market entrants like DuckDuckGo or Ecosia.<sup>25</sup>

By contrast, publisher data, such as that used by StatCounter, measures who visits publisher sites across all devices. No one needs to opt in except for the publisher. With enough publishers, the research will accurately determine search engine market share. StatCounter relies on a large sample of over 2 million publisher sites, which translates into “10 billion page views per month.”<sup>26</sup> However, StatCounter uses a tracking code to create its market share reports, which DuckDuckGo’s mobile browser and browser extensions block to protect user privacy. As a result, StatCounter’s reports dramatically understate DuckDuckGo’s market share.

### *A SNAPSHOT OF SEARCH ENGINE MARKET SHARE*

Despite its flaws, StatCounter’s data gives a solid outline of search engine market share. In February 2021, Google held between 89.5% and 92.5% market share in North America and in Europe,<sup>27</sup> followed by Bing (close to 5%), Yahoo (between 0.7% and 2.5%) and DuckDuckGo (between 0.7% and 2%).

---

<sup>24</sup> <https://www.conductor.com/blog/2014/05/shouldnt-trust-comscores-numbers-search-engine-market-share-data/>

<sup>25</sup> <https://www.comscore.com/Insights/Rankings>

<sup>26</sup> <http://gs.statcounter.com/faq>

<sup>27</sup> Because StatCounter’s “Europe” region includes Russia, despite Russia being a distinctively different market, we looked at the figures in the United Kingdom and Germany. The full set of market share numbers is available here: [North America](#), [United Kingdom](#), [Germany](#).



To get the clearest picture of search engine market share, governments should directly gather data from a wide and balanced sample of website publishers. Inherent in how the Internet works and online traffic is routed, when a user visits any website, that site will know the user’s immediately preceding website (this is called referrer information). For example, if a user searches for “durable umbrella” on Google.com and clicks on UmbrellaStore.com on the results page, then the UmbrellaStore will know that user came from Google. If a government obtains referral information from high-traffic and appropriately selected (unbiased) websites (aka publishers), the government can readily determine search engine market share.

## V. CONCLUSION

Search engines are gateways to the web and essential to an open Internet. Yet, competitive market conditions are non-existent, a victim of high barriers to entry, constraints inherent in syndication, and Google’s monopoly power across core access points to the Internet. Governments can and should take swift, high-leverage actions to tackle Google’s exclusionary practices, such as by mandating well-designed preference menus.

## CONTACTS





# Smartphones share our data every four and a half minutes, says study

Research claims there is little difference between Apple and Google when it comes to collecting certain data



Android handsets and iPhones send back data even when idle in a pocket or a handbag, according to the new academic study. Photograph: Getty Images

**Ciara O'Brien**

Sat, Mar 27, 2021, 05:42



Android handsets and iPhones share data with their respective companies on average every 4½ minutes, with data being sent back even when idle in a pocket or handbag, according to a new academic study.

The Trinity College Dublin research has raised fresh privacy concerns about smartphones, with the research claiming there was little difference between Apple and Google when it came to collecting certain data.

The study, which was published by Prof Doug Leith at Trinity's Connect Centre, claimed iPhones offered no greater privacy than Google devices.



Among the data potentially sent back by the handsets were the insertion of a SIM and handset details such as the hardware serial number, IMEI, Wifi MAC address and the phone number.

“I think most people accept that Apple and Google need to collect data from our phones to provide services such as iCloud or Google Drive. But when we simply use our phones as phones – to make and receive calls and nothing more – it is much harder to see why Apple and Google need to collect data,” said Prof Leith.

“Yet in this study we find that Apple and Google collect a wealth of information in precisely that situation. It seems excessive, and it is hard to see why it is necessary.”

Prof Leith said it was disappointing to see so much data being collected by Apple in particular as the company had talked much about user privacy in the past.

He said the devices not only collected data about handset activity, but also about handsets nearby; when a user connects to a wifi network the WiFi MAC addresses of other devices on the network are sent to Apple.

ADVERTISEMENT

“The WiFi MAC address identifies a device on a WiFi network and so, for example, uniquely identifies your home router, cafe hotspot or office network. That means Apple can potentially track which people you are near to, as well as when and where. That’s very concerning.”



The research highlighted some major concerns over the collection of such data, noting that device data could be linked to other data sources, including web browsing and shopping purchases.

“This research outlines how smartphones work,” a spokesperson for Google said. “Modern cars regularly send basic data about vehicle components, their safety status and service schedules to car manufacturers, and mobile phones work in very similar ways. This report details those communications, which help ensure that iOS or Android software is up to date, services are working as intended, and that the phone is secure and running efficiently.”

Apple has not yet commented on the study.

Is it time to make your next career move?

**RECRUIT**  
IRELAND.COM  
EXECUTIVE

## Read More



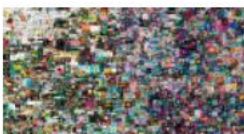
Strike aims to raise €6.5m to go big with contactless payments  
Fri, Mar 26, 2021



How Intel ended up investing billions in Ireland  
Fri, Mar 26, 2021



Dublin-based operator of transatlantic fibre-optic cable to be sold  
Wed, Mar 24, 2021



This week we're talking about... NFTs  
Tue, Mar 23, 2021



Patrick and John Collison: Stripe's 30-something billionaires  
Fri, Mar 19, 2021



Sponsored by: Lid

Real news has value

SUBSCRIBE

## Most Read



Johnson and Johnson to delay European vaccine rollout as it reviews clot cases about 2 hours ago



How supermarkets trick us into buying unhealthy food, and what we can do about it about 7 hours ago

Exemption of vaccinated people from mandatory hotel quarantine being considered about an hour ago

Fintan O'Toole: Prince Philip - asylum-seeker and citizen of nowhere, but rich and white about 14 hours ago

Can I see copies of earlier wills my mother wrote? about 9 hours ago

## Latest

Over one-fifth of Dublin Bay water users become ill, pressure group claims 6 minutes ago

Wife and partner of men who died in sewer incident secure settlements of €175,000 8 minutes ago

Kildare stabbing upgraded to murder investigation 18 minutes ago



NEWS

BUSINESS

LATEST

MOST READ

LISTEN

IRELAND

WORLD

SPC

car 27 minutes ago

Government deficit last year was €18.4bn as pandemic struck

30 minutes ago

Subscribe

About

Policy & Terms

All Articles

Cookie Settings



Download on the  
App Store



GET IT ON  
Google Play

© 2021 THE IRISH TIMES



[Home](#)[Tips](#)[Newsletter](#)[Research](#)[News](#)

# Most Browser Tracking Protection Doesn't Actually Stop Tracking by Default, but We Can Help

FILED UNDER PRIVACY RESEARCH ON 30 MAR 2021



As [yet another sign](#) of how privacy is now completely mainstream, the major desktop browsers are stepping up their privacy promises. For example, you may have been hearing about how even Google's Chrome browser is [supposedly planning](#) to eliminate "third-party cookies" by 2023, a move Apple's Safari browser has already [mostly carried out](#) and Mozilla's Firefox browser has [partially made](#).

You may be wondering then, will eliminating third-party cookies and [related developments](#) completely prevent trackers that are [lurking behind websites](#) from getting your browsing history? Unfortunately, the answer is no. We know this is super confusing and would like to help you make sense of it all as well as help you actually block these invasive cross-site trackers!

The issue is that once such trackers are loaded in your browser, they have a ton of ways to track you beyond just third-party cookies (e.g., by another form of cookies called [first-party cookies](#), by [your IP address](#), and [much, much more](#)). And many of these mechanisms cannot be turned off because the browser needs them to properly function.

Blocking third-party cookies and related mechanisms do partially restrict cross-site trackers (which is a good thing for sure), but the reality is that as long as a tracker is still being loaded in your browser, it can definitely still track you — a bit less easily, but tracking is still tracking, and the most prevalent cross-site trackers (those [from Google and Facebook](#)) are certainly still tracking you. In this context, browser privacy tech that just restricts trackers after they have loaded is like using an umbrella in a hurricane: You're still gonna get wet!

Therefore, to really stop a cross-site tracker, the kind that tries to track your activity from site to site, you have to prevent it from actually loading in your browser in the first place. This is a critical blocking feature that we provide in our all-in-one privacy browser extension for desktop [Chrome](#), [Firefox](#), [Edge](#), and [Safari](#), as well as in our own mobile browser for [iOS](#) and [Android](#).

Blocking trackers from even loading also has major benefits beyond privacy: increased speed and less data usage. In our tests on a sample web page (WebMD.com), using our tracker blocking resulted in 66% fewer files loading, 34% less data transferred, and, consequently, increasing page load speed by 46% (see bottom section for details).

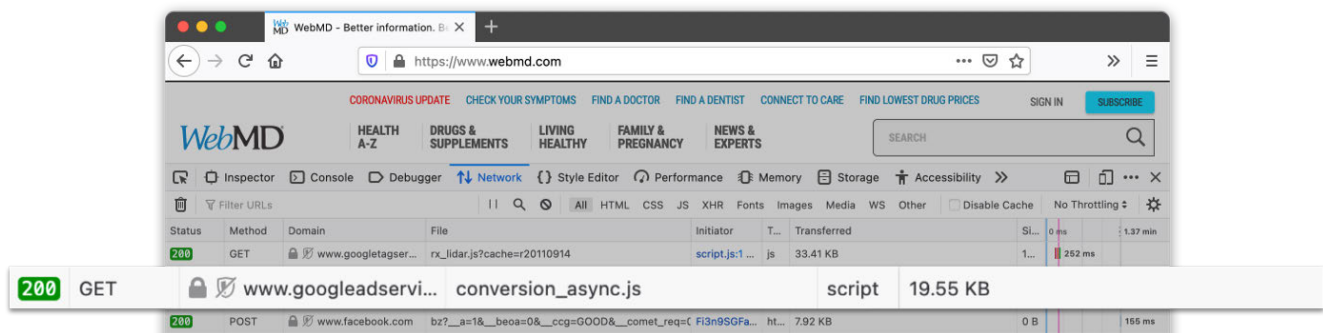
To sum up, to really stop trackers, you need to totally block them from loading in your browser — just placing restrictions on trackers after they load (like preventing them from using third-party cookies) won't cut it. That's the story in a nutshell, and below is more detail if you want to dig deeper, including how you can see it working in your own browser.

## How Cross-Site Web Trackers Work

To dig in a bit further, let's define a cross-site web tracker as anything that can load on a web page to track your web activity across sites, e.g., your browsing history. To do so, a cross-site web tracker has to do three things:

1. Grab your information.
2. Associate your information with your unique ID at the tracking company (behind the tracker).
3. Send your information back to the tracking company for future profiling.

When you go to a website, it loads the web address (URL) at the top of the browser. What you may not realize, though, is that websites also ask your browser to load many more web addresses (URLs) in the background, and some of those are to third-party trackers. In Firefox (used in the images below), you can see this by going to Tools -> Web Developer -> Network, and then refreshing the page. (Other browsers have similar mechanisms, e.g., in Chrome you can do the same by going to View -> Developer -> Developer Tools, clicking on Network on the panel that comes up, and then refreshing the page.)





Status	Method	URL	File Name	Size	Time
200	GET	www.facebook.com	fAO_dMD3Ny6.js?_nc_x=lj3Wp8lg5Kz	script	12.99 KB
200	GET	www.facebook.com	vuKyeU8UeO1.css?_nc_x=lj3Wp8lg5Kz	css	20.65 KB
200	GET	www.facebook.com	tj4qfWwN2FP.js?_nc_x=lj3Wp8lg5Kz	js	5.98 KB
200	GET	www.facebook.com	3kO5EE5fjbjk.js?_nc_x=lj3Wp8lg5Kz	js	8.44 KB
200	GET	www.facebook.com	LIYOMNY8Md.js?_nc_x=lj3Wp8lg5Kz	js	9.83 KB
200	GET	www.facebook.com	EO1KFJSEubA.js?_nc_x=lj3Wp8lg5Kz	js	16.43 KB
200	GET	www.facebook.com	r5dvFMwWhtw.css?_nc_x=lj3Wp8lg5Kz	css	5.83 KB
200	GET	www.facebook.com	onuUj0tCqE.png	img	4.38 KB
200	GET	www.facebook.com	ApcBOUT5FoS.png	img	1.09 KB

*Google & Facebook trackers loaded on [WebMD.com](#).*

A visit to [WebMD.com](#) using the desktop versions of the major browsers with default settings actually results in hundreds of web requests! Many of those are images and code from WebMD itself to display what you see on screen, but among them is a web request to Google Analytics, the most prevalent cross-site tracker on the Internet, lurking behind [72% of the top 10K websites](#). (The second most prevalent tracker is [Google Global Site Tag](#) and third is [Facebook Pixel](#).)

When your browser makes this web request to Google Analytics, it exposes your [IP address](#) in the process – the string of numbers that identifies your device on the Internet (e.g., 18.250.0.1). Your IP address alone can make a [pretty effective tracking ID](#), especially in most desktop situations where it doesn't change frequently because both the device and Internet connection are stable. And embedded information within these types of requests can contain a lot more information about your activity along with other identifiers, which is often why URLs are so long!

Once a tracker loads in your browser it has many more ways it can grab information, create unique IDs to identify you (called [browser fingerprinting](#)), and send everything back to its tracking network. That's because most trackers run JavaScript code, which opens up a whole host of sophisticated tracking techniques that can effectively grab everything you do in the browser, from your mouse movements to your location to every keystroke you enter. And it is impossible to completely restrict all of these techniques because many are needed to make major sites function properly.

In other words, third-party cookies are just one of many browser mechanisms available to trackers, but even without them trackers can still track you through many other methods, including via the information sent in the initial loading web request.

The United Kingdom's Competition and Markets Authority's [landmark report on the digital advertising market](#) makes this clear in [Appendix G, section 325](#):

*“However, we note that it is possible to circumvent blocks on third-party cookies, by asking advertisers and publishers to implement equivalent tracking code using first-party cookies.*

*(i) For instance, Google Analytics tags are currently implemented using first-party cookies. (See section above on Google Analytics, Floodlight, and Google Tag Manager.)*

*(ii) To take another example, Facebook Pixel collects data from non-Facebook properties which is used for Facebook's advertising services, and websites can implement Facebook Pixel using first-party cookies. This means Facebook Pixel can work with browsers blocking third-party cookies.”*

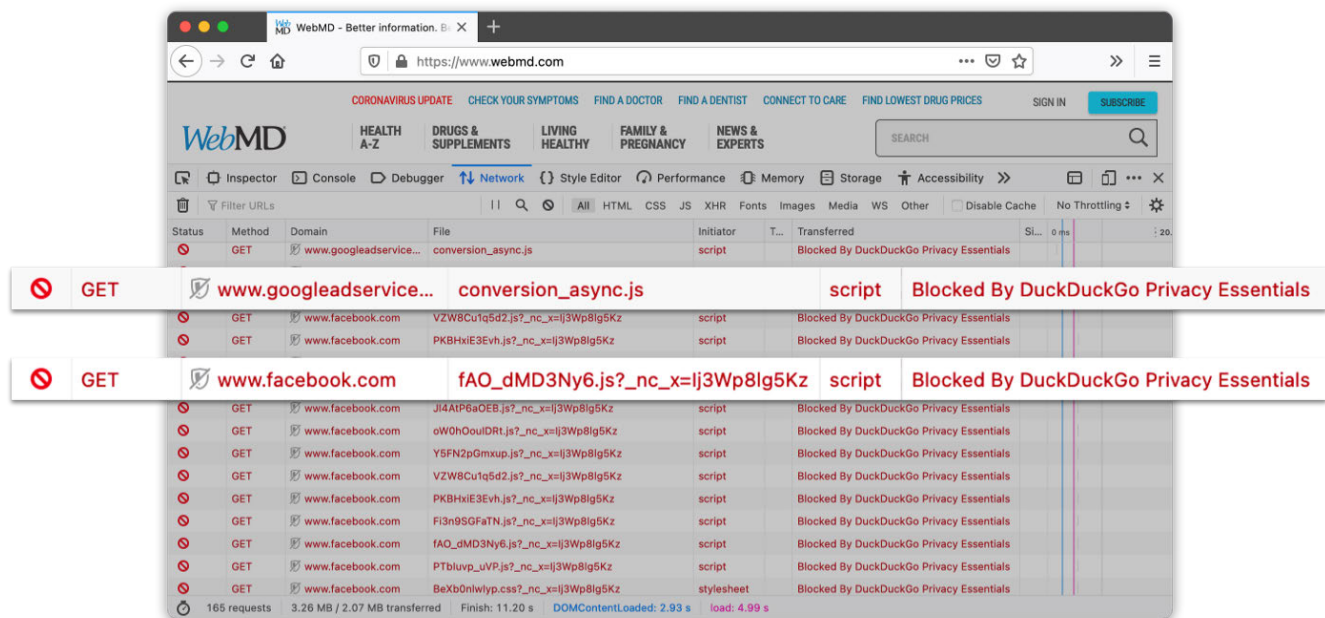
That is, the two most prevalent cross-site trackers aren't really constrained by current or upcoming default tracker restrictions. The report goes further saying that a world without third-party cookies in particular will likely strengthen Google and Facebook's digital advertising duopoly. Fortunately, there is a way to effectively curtail invasive cross-site web trackers: By stopping them from loading in your browser in the first place.

## How to Really Stop Cross-Site Web Trackers

To really stop cross-site web trackers, you need to totally block them from loading in your browser, as opposed to just restricting them after they load. That is the only way to stop the Google Analytics tracker, the Facebook pixel tracker, and hundreds of other trackers from stalking you across the Internet, including through your IP

address. By doing so, your browser will then stop automatically sending any of your information to these trackers just by visiting an unrelated website, making it harder for them to use your browsing history for filter bubbles, creepy ads, and more.

To use another metaphor, regular privacy browser tech is like locking the back door of the house (third-party cookies) and a few windows (related restrictions) but leaving the front door wide open (IP address) along with the rest of the windows (many other forms of tracking including first-party cookies). Google Analytics is doing just fine in this situation, as are most of all the rest of the major trackers. To stop these trackers effectively, you have to board up the whole house and not let them see inside at all. Here's what that looks like with our browser extension and in our own browser:



*Google & Facebook trackers blocked by DuckDuckGo.*

We simply prevent the browser from allowing that initial tracker web request to even get off the ground. And, using our [Tracker Radar technology](#), we are continually crawling the web ourselves to identify the universe of these requests. Our product vision is privacy, simplified, and so we block as many trackers as we can while simultaneously not breaking website functionality. This is of course a constant effort since trackers are continually changing.

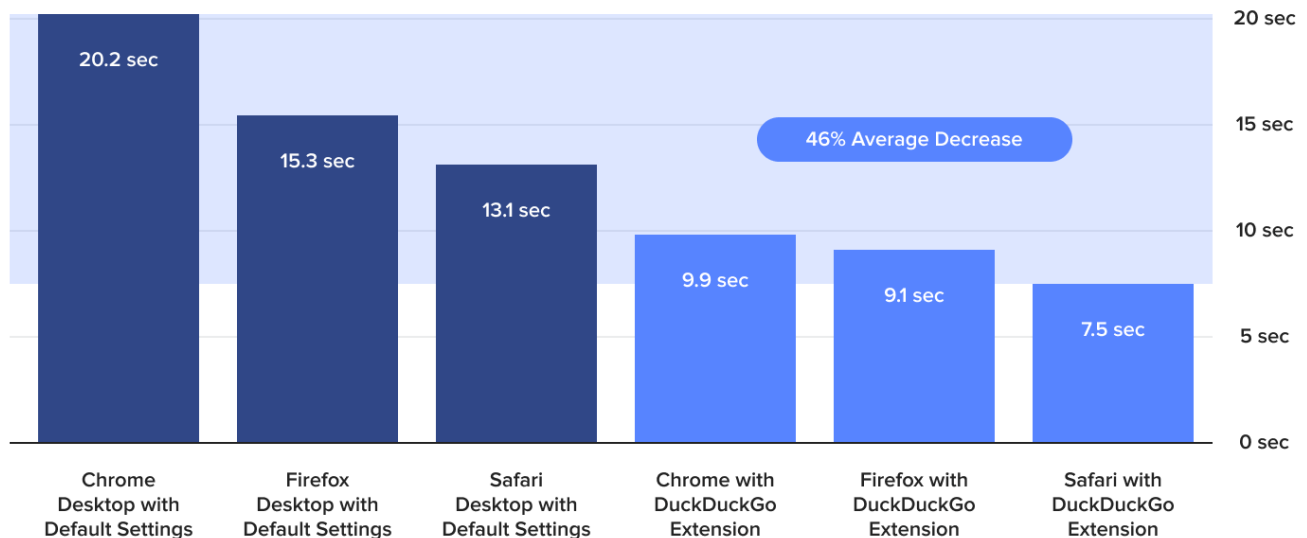
As you might imagine, this is also a challenging technical problem. Without some additional privacy technology like we provide in our product, blocking some of these hidden trackers — like Google Analytics — can break some sites based on how tightly they've been integrated into website functionality. But we think a tracker blocker that doesn't prevent the most prevalent hidden tracker from loading isn't a credible tracker blocker (as Google Analytics is by far the most prevalent). We are now also starting to work on blocking initial requests of visible third-party content like video embeds, with more to come on that in a future post.

## How DuckDuckGo Improves Your Browsing Experience

The result of using the DuckDuckGo app & extension on a web page is that potentially hundreds of behind-the-scenes tracker requests are blocked before they even load, meaning not just greater privacy but also additional benefits like less data transfer and faster load times. That's because so much of the data associated with a website nowadays is actually just for tracking you!

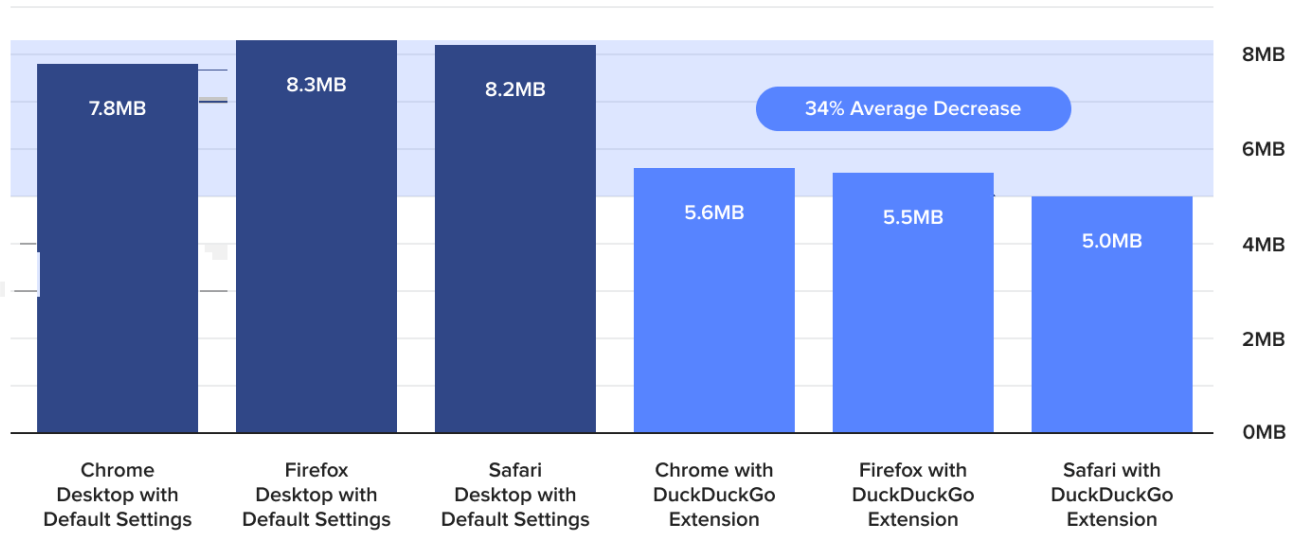
### Page Load Speed Visiting WebMD.com on Desktop

*The time taken to load the web page. Lower is better.  
(Measured using the loadEventEnd property)*



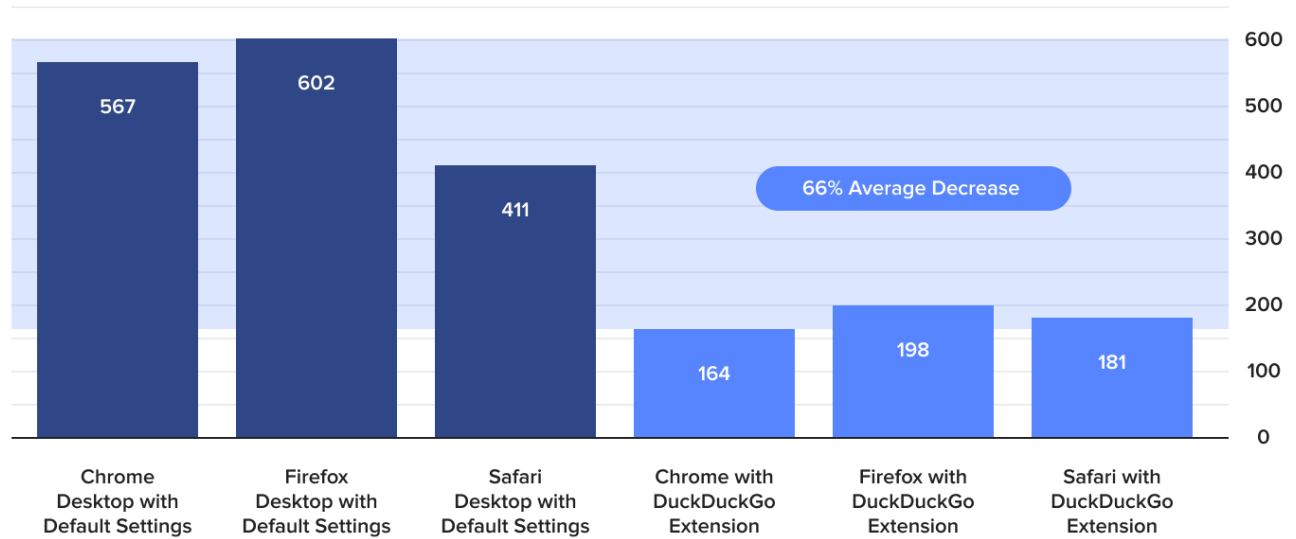
### Browser Data Transfer Visiting WebMD.com on Desktop

The combined size of all files sent from the website. Lower is better.



### Browser Web Requests Visiting WebMD.com on Desktop

The number of files sent from the website. Lower is better.



Measurement of network traffic averaging 100 visits to WebMD.com (Jan 2021)



	BROWSER-ONLY AVERAGE	BROWSER + DUCKDUCKGO EXTENSIO
Web Requests	527	181
Data Transferred (MB)	8.1	5.4
Page Load Time* (seconds)	16.2	8.8
Google Analytics Tracker	Allowed to load	Blocked from loading
Facebook Pixel Tracker	Allowed to load	Blocked from loading

\* Page load time measured using the `loadEventEnd` property.

While Google, Facebook, and others work hard to have their trackers get around browser roadblocks in pursuit of your data, we provide the tool to really push back without changing how you use the Internet. For everyone who's had enough: the DuckDuckGo [app & extension](#) lets you take back your online privacy now.

Note: Google [recently announced](#) how they plan to replace third-party cookies. It's of course [bad for privacy too](#), but the tracker blocking technology in our app & extension should continue to be effective at preventing trackers from receiving this new tracking information (along with your IP address) by still preventing them from loading in the first place.

---

*For more privacy advice [follow us on Twitter](#), and stay protected and informed with our [privacy newsletters](#).*

## DuckDuckGo Privacy Newsletters

Stay protected and informed with our privacy

newsletters.

- Privacy Crash Course** — Practical tips for keeping your personal info private. [See example.](#)
- Privacy Weekly** — Latest news for all things related to privacy. [See example.](#)

SUBSCRIBE

Your email address will not be shared or

— Spread Privacy —

# Privacy Research



As Predicted, Google's Search Preference Menu Eliminates DuckDuckGo

---

Google Search Mobile Market Share Likely to Drop Around 20% through Search Preference Menus

---

The Risky Business of Charging Your Phone in Public

---

[See all 17 posts →](#)



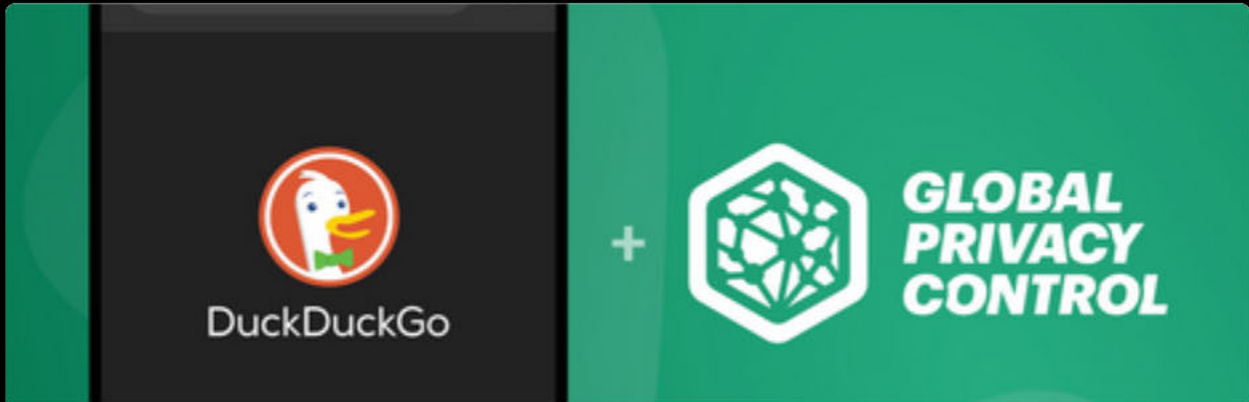
DUCKDUCKGO NEWS

## Use the DuckDuckGo Extension to Block FLoC, Google's New Tracking Method in Chrome

Google has created a new tracking mechanism called FLoC, put it in Chrome, and automatically turned it on for millions of users. It's bad for privacy, which is why we're now blocking it in the DuckDuckGo extension.



5 MIN READ



DUCKDUCKGO NEWS

## Global Privacy Control (GPC) Enabled by Default in DuckDuckGo Apps & Extensions



## **Suggested Questions for Google regarding EU Preference Menu**

### **1. Compensating Google**

*Google based the preference menu on an auction mechanism because it claims it is a fair way to “help [them] continue to invest in developing and maintaining the Android platform”, but we have no information as to how Google actually uses that money, or how impactful it really is in the scope of Android development.*

- a. What is the aggregate amount of money earned by Google in the auction thus far, broken down by country, number of preference menu impressions, non-Google selections, and auction period?
- b. What order of magnitude did the preference menu proceeds constitute in Google’s overall Android operating expenses for 2020: <-.1%, 0.1%, 1%, 10%, >10%?
- c. Assuming the preference menu auction results in each participating search engine paying Google 50%+ of the profits it makes from its auction participation, does Google consider that a fair outcome? If not, what % does Google think is fair? Is there any percentage that Google considers unfair?
- d. Does Google allocate money for Android development that is tied to the number of times that Google is selected in the preference menu?
- e. Does Google acknowledge that the current auction system requires “winners” to pay Google for users who had the “winner” set as its default search engine on Chrome on his prior device?
- f. Does Google acknowledge that the current auction system requires “winners” to pay Google for users who had the “winner’s” app downloaded on his prior device?
- g. Is Google able to detect the users identified in subparts I and (f) (“Existing Users”) as part of the new device transfer process for uses with pre-existing Google and/or Google Play accounts?
- h. Will Google agree to not charge auction “winners” the closing price for Existing Users?
- i. Does Google acknowledge that the current auction system requires a “winner” to pay Google even when the user, within 4 weeks of selecting a non-Google search engine via the preference menu, (A) deletes the “winner’s” app; (B) deletes the winner’s home screen search widget<sup>1</sup>; or (C) changes the default search setting for Chrome (“Quick Dippers”)?

---

<sup>1</sup> Google automatically places a Google Search widget when a user deletes a non-Google home screen search widget.

- j. Will Google agree to not charge auction “winners” the closing price for Quick Dippers?
- k. For those devices on which users have selected a non-Google search engine via the preference menu, will Google agree to forgo prompts (e.g., pop up boxes) to the user on that device to change the Chrome search default or download the Google home screen search widget?
- l. For those devices on which users have selected a non-Google search engine via the preference menu, will Google agree to disable the Google Search access points embedded within Google apps pre-installed or re-installed upon device activation (e.g., Google Maps, YouTube, Gmail)?

## 2. The auction system

*The current auction system doesn't display all the search engines consumers expect to be there, and discriminates against search engines that monetize relatively less due to non-profit donations and/or privacy protection<sup>2</sup>. As such, the preference menu should have a mechanism for search engines to freely participate. These alternative systems wouldn't discriminate between business models and would limit the transfer of profits to Google to reasonable levels.*

- a. Google states that it adopted the auction system because “An auction is a fair and objective method to determine which search providers are included in the choice screen.”<sup>3</sup>
  - i. Does Google consider this auction system a fair mechanism to effectuate consumer choice of search engines? If so, how?
  - ii. Does Google consider this auction system a fair mechanism to diversify the search engine market? If so, how?
  - iii. Does Google believe this auction system overall benefits consumers? If so, how?
  - iv. Does Google believe this auction system overall benefits search engine competition? If so, how?
  - v. Does Google believe other systems could be designed, other than the current auction mechanism, that would be a “fair and objective method to determine which search providers are included in the choice screen?”
- b. Assuming Google receives sufficient “revenues [to] help us continue invest[ing] in developing and maintaining the Android platform,” would it be fair and objective to determine which search engines to appear on the preference menu based on market share? If no, why?

---

<sup>2</sup> DuckDuckGo's SpreadPrivacy blog: “[Search Preference Menus: No Auctions Please](#)”, published on March 10<sup>th</sup>, 2020.

<sup>3</sup> <https://www.android.com/choicescreen/>

- c. Assuming Google receives sufficient “revenues [to] help us continue invest[ing] in developing and maintaining the Android platform,”<sup>4</sup> would it be fair and objective to determine which search engines appear on the preference menu based on the number of times a search engine’s app had been downloaded from Google Play during the prior calendar quarter? If no, why?
- d. Assuming Google receives sufficient “revenues [to] help us continue invest[ing] in developing and maintaining the Android platform,” is it fair and objective to determine which search engines appear on the preference menu based on how highly they monetize per user selection? If yes, why?
- e. Among the scenarios described in (b), (c), and (d), which method is most fair and why? Which method most benefits consumer choice and why? Which method most benefits a diversification of the search engine market and why?
- f. What is the minimum amount of money that Google believes the preference menu process should generate in order to “help [Google] to continue to invest in developing and maintaining the Android platform?”<sup>5</sup>
- g. Will Google adopt an alternative participation format (“Alternative Format One”) where the 25% of the first screen is a first-price auction open to eligible search engines, the remaining 75% of the first screen is freely populated with eligible search engines displayed by country market share, and subsequent screens (available via scrolling) are freely populated with additional eligible search engines randomly ordered? If no, why not? What aspects of Alternative Format One are objectionable and why? How does Google propose adjusting Alternative Format One?
- h. Will Google adopt Alternative Format One with the paid portion specifically based on a “per-appearance” auction?<sup>6</sup> If no, why not?
- i. Will Google adopt an alternative participation format (“Alternative Format Two”) where the first screen is populated with eligible search engines with the most market share (per country) who sign a revenue share contract with Google at a set percentage (e.g., 15%), and subsequent screens (available via scrolling) freely populated with additional eligible search engines? If no, why not? What aspects of Alternative Format Two are objectionable and why? How does Google propose adjusting Alternative Format Two?

---

<sup>4</sup> <https://www.android.com/choicescreen/>

<sup>5</sup> <https://www.android.com/choicescreen/>

<sup>6</sup>A [paper](#) by Prof. Michael Ostrovsky of Stanford University, published on November 7<sup>th</sup>, 2020, demonstrates that the current “per install” auction mechanism favours those search engines, even small, making the most money per user (e.g., through intrusive ads), while a “per appearance” mechanism is more neutral as it simply relates to the preferred options for consumers.

- j. Will Google adopt an alternative participation format (“Alternative Format Three”) where the first screen is populated with eligible search engines with the most market share (per country) who sign a “flat fee per selection” contract with Google at specified fees per country (e.g., 0.10c in Italy), and subsequent screens (available via scrolling) freely populated with additional eligible search engines? If no, why not? What aspects of Alternative Format Three are objectionable and why? How does Google propose adjusting Alternative Format Three?

### 3. Transparency

*Google has not shared data on the real-world performance of the search preference menu, which distorts bidding decisions. The absence of information also makes it impossible for us and the Commission to verify compliance (i.e., whether the preference menu indeed appears on the correct Android phones in all EEA countries and with the appropriate auction “winners”).*

- a. For each auction period, in each country, how many times has the preference menu been displayed?
- b. A participating search engine will know, as a result of Google’s invoice, that consumers have selected it X times in Germany during Auction Period 3 – but that search engine will not know if that X constitutes a high or low percentage of total preference menu displays for Germany during that period. What information does Google propose to supply to the “winners” that will provide this insight?
- c. Will Google agree to publicly disclose, for future auction cycles, the total number of times the preference menu is displayed for each country? If no, why not? What aspect of this proposal is objectionable? For example, will Google agree to provide this data to auction participants on a confidential basis?
- d. For each auction period, in each country, how many times has Google been selected in the preference menu?
- e. Will Google agree to publicly disclose, for future auction cycles, the total number of times that Google is selected in the preference menu for each country? If no, why not? What aspect of this proposal is objectionable? For example, will Google agree to provide this data to auction participants on a confidential basis?
- f. For each auction period, in each country, how many times have non-Google search engines, in aggregate, been selected in the preference menu?
- g. Will Google agree to publicly disclose, for future auction cycles, the total number of times that non-Google search engines, in aggregate, are selected in the preference menu for each country? If no, why not? What aspect of this proposal is objectionable? For example, will Google agree to provide this data to auction participants on a confidential basis?

- h. Why does Google delay auction invoices to auction participants for multiple weeks following an auction cycle? Will Google agree to provide invoices within 10 days following the close of a calendar month?
- i. Will Google agree to disclose the number of Existing Users (defined above) on auction invoices?
- j. Will Google agree to disclose the number of Quick Dippers (defined above) on auction invoices?
- k. Does Google know the number of times the preference menu is displayed in a particular country? Can Google make this determination on an hourly basis? A daily basis? A weekly basis? A monthly basis?
- l. Google knows the number of times a specific search engine is selected via the preference menu in a particular country per auction quarter, because Google uses this data to send invoices to the auction “winners.” Can Google make this determination on an hourly basis? A daily basis? A weekly basis? A monthly basis?
- m. Will Google agree to provide a dashboard that reports on preference menu triggering and on search engine selections via the preference menu? If no, why not? How is this different, technically, than the online console in which Google Play app developers can view live updates on the number of times their app is displayed and also downloaded?
- n. Will Google agree to provide to auction “winners” the following real-time metrics in aggregate numbers per country per auction period:
  - i. when a user deletes the winner’s app;
  - ii. when a user changes their search engine in Chrome from the winner;
  - iii. when a user removes the winner’s search widget;
- o. Will Google publicly disclose on a monthly basis a list of devices that Google has certified for the preference menu? If no, why not? What aspect of this proposal is objectionable? For example, will Google agree to provide this data to auction participants on a confidential basis?

#### **4. Preference menu activation**

*Right now, change happens extremely slowly because Google displays the preference menu only on certified-after-March 1, 2020 Android phones sold in the European Union and because Google displays that preference menu only upon device activation. Yet in Spring 2019, Google displayed a preference menu through the Play Store to all existing Android phones in the European Union. Similarly, in Russia, Google displayed a preference menu for its Chrome Browser for all existing Android phones<sup>7</sup>.*

---

<sup>7</sup> [“Federal Antimonopoly Service reaches settlement with Google”](#), April 17<sup>th</sup>, 2017



- a. Is Google technically able to display the preference menu on existing Android phones? If no, list each technical barrier and what Google would need to do to remove the technical barrier.
- b. What non-technical barriers prevent Google from displaying the preference menu on existing Android phones? What could Google do to remove these non-technical barriers?
- c. Does Google acknowledge that, for devices currently designed to display the preference menu, if the user selects a non-Google search engine in the preference menu but later deletes the non-Google search engine app, the home screen search bar automatically reverts to Google Search? What technical barriers exist that prevent the preference menu from displaying again in this scenario? What non-technical barriers exist that prevent the preference menu from displaying again in this scenario? What could Google do to remove these technical and non-technical barriers?
- d. Is Google technically able to create a setting by which a user could return to the preference menu following device activation, such that the user could select a different search engine? If no, list each technical barrier and what Google would need to do to remove the technical barrier.
- e. What non-technical barriers prevent Google from creating a setting by which a user could return to the preference menu following device activation, such that the user could select a different search engine?
- f. In creating a setting by which a user could return to the preference menu following device activation, does Google acknowledge that it is technically able to architect that setting such that a search engine can assist users in jumping to that setting with one click within the search engine's app or via the search engine's website? Does Google agree to create such a setting? If no, why not?
- g. Is Google technically able to display the preference menu on certified-after-March 1, 2020 Android devices following device activation, such as on a quarterly basis? If no, list each technical barrier and what Google would need to do to remove the technical barrier.
- h. What non-technical barriers prevent Google from displaying the preference menu on certified-after-March 1, 2020 Android devices following device activation, such as on a quarterly basis? What could Google do to remove these non-technical barriers?
- i. Solely for changing the default search engine in the Chrome browser, is Google technically able to display the preference menu on certified-after-March 1, 2020 Android phones following device activation, such as on a quarterly basis? If no, list each technical barrier and what Google would need to do to remove the technical barrier.
- j. Solely for changing the default search engine in the Chrome browser, what non-technical barriers prevent Google from displaying the preference menu on certified-

after-March 1, 2020 Android devices following device activation, such as on a quarterly basis? What could Google do to remove these non-technical barriers?

- k. Solely for changing the default search engine in the Chrome browser, is Google technically able to display the preference menu on existing Android phones, such as on a quarterly basis? If no, list each technical barrier and what Google would need to do to remove the technical barrier.
- l. Solely for changing the default search engine in the Chrome browser, what non-technical barriers prevent Google from displaying the preference menu on existing Android phones, such as on a quarterly basis? What could Google do to remove these non-technical barriers?
- m. Does Google acknowledge that it is technically able to update software code in the Android operating system such that users would be able to obtain the preference menu outcomes (downloading search engine app if not already done, installing home screen search bar, changing Chrome search engine default) by accessing a website (e.g., [www.duckduckgo.com](http://www.duckduckgo.com)), provided that such website triggered its own code (e.g., a popup box and one-click consent)? Does Google agree to update the code in this manner? If no, why not?
- n. Does Google acknowledge that it is technically able to update software code in the Android operating system such that users would be able to obtain the preference menu outcomes (installing home screen search bar, changing Chrome search engine default) by downloading a search engine app, provided that such app triggered its own code (e.g., a popup box and one-click consent)? Does Google agree to update the code in this manner? If no, why not?
- o. The preference menu does not change the search default for all search access points controlled by Google on Android, such as the search engine setting for Google's voice assistant (accessed via button or voice command) or Google's smart keyboard (enabled by default on some Android models).<sup>8</sup> Will Google agree to effectuate the user's search engine selection via these search access points? If no, why not?

## 5. Design

*User testing demonstrates that Google's current preference menu design artificially limits choice and discourages users to pick rivals.<sup>9</sup>*

1. Which of the following design changes will Google implement? If no, why not? What aspect of this specific design change is objectionable and why? How does Google propose adjusting the specific design change?

---

<sup>8</sup> Gboard, <https://www.businessinsider.com/what-is-gboard>

<sup>9</sup> DuckDuckGo's blog "[Search Preference Menus: Improving Choice With Design](#)" of January 28<sup>th</sup>, 2020, followed by large-scale user testing detailed in the blog of May 20<sup>th</sup>, 2020, "[Search Preference Menus: Google Auction Ignores Screen Size and Scrolling](#)".

- i. Scrolling such that more than one screen of search engines is displayed on the preference menu;
  - ii. An explanatory screen that immediately precedes the preference menu;
  - iii. A statement prominently displayed on the preference menu screen or on the immediately preceding screen that informs users that they can easily change to a different search engine later;
  - iv. Use the phrase “search engine” rather than “search provider;”
  - v. Move details on the mechanics of the search engine selection (specifically, that a selection will cause an app to be downloaded) to a “see more” link;
  - vi. Display search engine descriptions without additional user action (specifically, displaying the description without a user having to touch the screen);
  - vii. Make logo sizes 20% larger;
  - viii. Always display Google in the bottom portion of the preference menu (in a single-screen preference menu, the last-listed search engine; in a multi-screen preference menu, on the second or subsequent screen).
2. Does Google believe that more than 20% of users will scroll past the first screen if the preference menu has multiple screens?
3. Does Google acknowledge that the majority of certified-after-March 1, 2020 Android phones sold in the European Union have screen sizes that can fit more than four search engines on the currently designed preference menu?
4. What are Google’s objections, if any, to the following statement as applied to only those search engines that are eligible to participate in the auction: “Search engines vary on how they present results, match your values, and collect your data.” How would Google propose to revise this language?
5. What UX (user experience design) testing (A/B testing or otherwise) has Google conducted with the preference menu? Will Google agree to share this data with the Commission and/or us?

March 2021

## DuckDuckGo's position on the Digital Markets Act

**DuckDuckGo is a privacy technology company.** We believe that privacy is a human right and that getting privacy online should be simple and accessible to everyone. Every day, millions of people rely on our free all-in-one solution to stay private online. With one download of the DuckDuckGo Privacy Browser for mobile or the Privacy Essentials browser extension for desktop, we offer seamless protection to our users. This includes our tracker blocking technology and our private search engine that is the fourth largest in the European Union and serves over two billion queries a month. Established in 2008, we have been robustly profitable since 2014 as a result of revenue generated from contextual search advertising, which is based on the context of a page you are viewing, as opposed to behavioral advertising, which is based on detailed profiling about you as a person.<sup>1</sup>

**We welcome the Commission's unprecedented ambition in opening up digital markets with the Digital Markets Act (DMA).** We concur that it is critical to dilute the power of online gatekeepers, for the good of society, innovation, and competition. Google's 93% search market share in Europe<sup>2</sup> is the result of market foreclosure tactics, including hoarding default positions, either self-granted (Chrome, Android)<sup>3</sup> or acquired (iOS). The DMA has the potential to address deep market imbalances like this one, but it shouldn't jeopardize the proper implementation of antitrust decisions in the process – and it also shouldn't repeat mistakes evident in past enforcement failures.

**Many of the issues that people are rightfully concerned about on the Internet all stem from the same root: a lack of privacy.** The collection and exploitation of personal data strengthens the position of digital monopolists and leads to filter bubbles, discriminatory targeting, identity theft, misinformation campaigns, and chilling effects. As more people choose privacy, and as governments facilitate and buttress those choices, we can redress these harms. While privacy-protective businesses are coming from market innovators, governments need to ensure a truly competitive market actually exists. Today, such businesses cannot effectively reach users because of gatekeepers. **Together, the vigorous**

---

<sup>1</sup> [“What if We All Just Sold Non-Creepy Advertising?”](#), *The New York Times*, Gabriel Weinberg, June 19<sup>th</sup>, 2019

<sup>2</sup> <https://gs.statcounter.com/search-engine-market-share/all/europe> (as of January 26th, 2021)

<sup>3</sup> We discuss further below how the current design of the search preference menu on Android acts as a practice of equivalent effect to self-preferencing.

**enforcement of ex-post competition law and the DMA as a strong ex-ante regulatory framework, could form an effective architecture for tackling this competition problem.**

\*\*\*\*\*

***DMA recommendation #1: a stronger enforcement framework.***

- The Commission’s hiring target in the **annex** (80 full time equivalents) should be substantially increased by at least an order of a magnitude, and much closer to, for instance, the 600+ staff of the UK Competition and Markets Authority. The Commission should also formally commit to hiring a variety of expert profiles.
- While the Commission should remain the decision-maker of last resort, national competent authorities should have a formal supportive role in handling complaints, cooperating with market participants, conducting investigations, and monitoring compliance. They should act under the remit of a coordinating body which would replace the Digital Markets Advisory Committee, since such committees are usually composed of officials from national ministries.

***DMA recommendation #2: close the loophole in the gatekeeper identification procedure.***

- **There should be a three month deadline** (the same as the proposed notification deadline) for the **gatekeeper identification procedure** of article 3.6, which also applies when a presumed gatekeeper seeks to demonstrate it isn’t one (article 3.4).

**Both regulatory speed and technical savvy are key to success.** Strict deadlines measured in months, not years must be imposed and followed. The Commission must have substantial professional staff (lawyers, economists, engineers, researchers, technicians) and procedural power to obtain and understand documents, data, code, and other information. Without these resources, the Commission has no practical ability to do its job.<sup>4</sup> It is therefore of primary importance for the successful enforcement of the new regulatory framework that the legislature dedicates the necessary resources to the Commission in its oversight role. The enforcement framework should also give a supporting role to competent

---

<sup>4</sup> For example, a business that relies on Google for core services is bound by contract not to disclose restrictive contract provisions in the absence of compulsory process. Similarly, companies dependent on large gatekeepers may be reluctant to jeopardize their business by affirmatively reaching out to regulators but may be eager to respond to a legal requirement to provide information.

national authorities (competition, regulatory and/or data protection authorities depending on the country) given their breadth of experience in tackling big tech power and their resources and connection with local markets.<sup>5</sup> Should that not occur, the problem will only be exacerbated, much like the **deeply flawed search preference menu** instituted as a remedy in the aftermath of the **Commission’s Android competition case**.<sup>6</sup> More than a year after its rollout, the Android search preference menu, by which alternative search engines are forced to bid for a spot on an artificially limited user selection screen, has unsurprisingly had no impact on diversifying market shares.

\*\*\*\*\*

### ***DMA recommendation #3: a formal participation framework***

The DMA should include **formal avenues of participation**:

- In the gatekeeper designation procedure;
- In designing and monitoring remedies;
- With a possibility to lodge a formal complaint for alleged non-compliance;

In addition, competent national authorities should be able to cooperate with stakeholders in receiving complaints and undertaking their monitoring and investigation tasks.

**The failure of the case against Google’s anticompetitive practices with Android devices in restoring search competition** has also revealed how a lack of participatory processes prevents effective enforcement. The “remedy” was designed solely by Google, which continues to keep intense secrecy on its functioning from market participants. In October 2020, we voiced these concerns with other alternative search engines, together with a simple demand: a trilateral meeting with Google in order to improve the preference menu in practical ways.<sup>7</sup>

---

<sup>5</sup> In [Designing Remedies for Digital Markets: the Interplay Between Antitrust and Regulation](#) (November 2020), Filippo Lancieri (University of Chicago) suggests the harm identification, remedial design and monitoring tasks could be allocated to separate regulators (competition or regulatory authorities) depending on the nature of the incriminated practice. This model could serve as inspiration for designing an efficient European enforcement framework.

<sup>6</sup> In 2018, the [Commission imposed a record fine on Google](#) for illegal practices on Android mobile devices. The Commission found that Google leveraged its control of the mobile operating system (Android) and the app store (Play Store) to require device makers to pre-install Google’s browser (Chrome) and search app, therefore securing default positions. Google is also required to take action to reverse the improper advantage it obtained with a behavioral remedy, which led to the current search preference menu.

<sup>7</sup> <https://spreadprivacy.com/trilateral-search-meeting/>

Unfortunately, in its current form, the DMA reproduces this deficiency – market participants are given no role in providing the Commission with input, not even for complaints. Should the DMA continue to let the Commission engage in closed dialogues with very well-resourced gatekeepers, its proper enforcement will be in jeopardy.

\*\*\*\*\*

***DMA recommendation #4: include browsers in the list of Core Platform Services.***

- Browsers should be defined as a “Core Platform Service”, giving the Commission the possibility to intervene in a key area of gatekeeper control, as it demonstrates in its own impact assessment.<sup>8</sup> It would open the door to banning Google from setting its own search service as default on Chrome, or to set Chrome itself as default on Android.

***DMA recommendation #5: make it easier for the Commission to impose remedies in relation to all obligations.***

- The DMA proposal rightly acknowledges that restrictions to **self-preferencing and tying would need to be “further specified”**, i.e. by imposing specific remedies, listing these under Article 6. But under Article 5, the Commission lists provisions which it deems “self-executing”.
- **That artificial distinction between article 5 and 6 therefore needs to be removed.** It means that Article 7.2 on compliance needs to be amended to encompass Article 5 obligations. The Commission would thus be more easily able to “specify the measures that the gatekeeper concerned should implement” with regard a given obligation, without the need to go through the more burdensome non-compliance procedure.
- The relevant distinction between both articles could be maintained through **a broader Suspension Clause in Article 8, which would only be available to Article 6 obligations:** the incriminated practices would be presumed anti-competitive, unless gatekeepers are able to prove otherwise, taking into account the market in which they operate.<sup>9</sup> Article 5 would therefore constitute “absolute” obligations, banned under all circumstances.

---

<sup>8</sup> [European Commission’s impact assessment report on the DMA](#), SWD(2020) 363, pp 23, 41, 58

<sup>9</sup> Valletti et al similarly agree there should be a “grey list” of practices presumed anti-competitive, but for which a gatekeeper could demonstrate the pro-competitive nature. In [The EU Digital Markets Act: A Report from a Panel of Economic Experts](#), JRC European Commission, 2021

The Android decision has been instrumental in revealing how the combined forces of dominance in the browser (Google Chrome) and operating system (Android) markets enabled Google to entrench its search dominance and how a lack of attention to remedies can lead to a cure that is worse than the disease. In a [series of blog posts](#), we explained how **Google has only pretended to put an end to its abusive practices**.<sup>10</sup>

- Google’s commitment to introduce a **“pay-to-play” auction format** is egregiously flawed.<sup>11</sup> This format incentivizes bidders to bid what they can expect to profit per user selection. The long-term result is that the participating Google alternatives must give all their preference menu profits to Google! Google’s auction further incentivizes search engines to be worse on privacy, to increase ads, and to not donate to good causes because, if they do those things, then they could afford to bid higher.<sup>12</sup>
- Although many search engines exist, **Google only allows three choices in addition to Google itself**. User testing demonstrates that users will in fact scroll through multiple screens to see a full list of search engines. Even without scrolling, 96% of Android phones in Europe can display five search engines on the first screen, and 51% can display six or more, while still showing descriptions for all. Just 4% can only display four options – yet the Google-designed preference menu only displays four search engines.
- The Google-designed preference menu **uses dark patterns to give users the impression of choice**, when in fact subtle cues are driving those users toward Google. This can be corrected in part with [a scrollable menu, logos, simpler language, company descriptions, and an introductory screen](#). Additionally, users are unable to access the preference menu ever again without doing a complete factory re-set of the device.

---

<sup>10</sup> Other organizations agree. In January 2021, trade group FairSearch [published a paper](#) showing how Google circumvented the Android decision – not only through the flawed preference menu, but also by maintaining a *de facto* tying of Google Search and Chrome with its application store. DuckDuckGo is not a member of FairSearch.

<sup>11</sup> Every quarter, Google asks market participants to bid a price per user that selects them on the preference menu. The 3 highest bidders win and appear on the menu for the following quarter, paying Google for each user that selects them, at the price bid by the fourth (and losing bidder). See more on Google’s page: <https://www.android.com/choicescreen/>

<sup>12</sup> A [paper](#) by Prof. Michael Ostrovsky of Stanford University, published on November 7<sup>th</sup>, 2020, demonstrates that the current auction mechanism favors those search engines, even small, that make the most money per user (e.g., through intrusive ads), because search engines pay for each time a user installs them (“per install”). Google has so far disregarded other mechanisms that would be mathematically more neutral towards search engines’ business models, such as if payments were done for each time a user sees a search engine on the preference menu (“per appearance”).



\*\*\*\*\*

***DMA recommendation #6: introduce an explicit default / pre-installation ban for Core Platform Services (CPS).***

- Article 5.f bans gatekeepers from “*requiring [users] to subscribe to or register with any other CPS (...) as a condition to access, sign up or register to any of their CPS (...)*”. While the impact assessment connects this with the Android decision<sup>13</sup> the article falls short of **preventing gatekeepers from setting other CPS (as defined in the DMA<sup>14</sup>) as default on their platform(s)**. The co-legislators should connect the dots and make this explicit. This provision as written is nonetheless positive as it would allow users to **set up their Android device without creating a Google account**, which would limit Google’s ability to lock-in consumers.
- Similarly, article 6.1.b on **allowing end-users to un-install pre-installed apps** is positive, but not sufficient given the power of defaults. Additionally, that provision should also cover default settings in situations others than pre-installed apps, such as a search default on a browser.
- Article 6.1.e which prohibits gatekeepers from “*technically restricting the ability of end users to switch between (...) different software applications*” is also helpful, but insufficient. It may address, for instance, the **impossibility for users to easily change all search defaults on Android**, but this should be clarified in recital (51), which for now is focused on switching between Internet access service providers. Additionally, the mention in related recital (50) that “*pre-installed apps do not constitute a barrier to switching*” should be removed.

**Setting a service as default is the most direct, effective form of self-preferencing.** When a dominant company does so, consumers rarely switch to an alternative.<sup>15</sup> As a result, when a company has dominance in one gatekeeping market, it should not be permitted to obtain such automatic dominance in another one of these markets. This would effectively ban Google’s tying practices in search and

---

<sup>13</sup> Commission’s impact assessment report for the DMA, SWD(2020) 364, page 55.

<sup>14</sup> Core Platform Services serving as an important gateway for business users to reach end-users, as defined in recital 15.

<sup>15</sup> In [Deciding by Default \(2013\)](#), Cass R. Sunstein of the University of Pennsylvania exposed the remarkable power of default settings with consumers and provided a set of possible explanations. Google has well understood that defaults stick so much with consumers, paying Apple every year billions to be the default search engine on iOS – see *infra*.

browsing, as most plainly seen in the default settings or pre-installation of Google Search in its products (e.g., the Android default home screen search bar, the search default in the Chrome browser on both mobile and desktop devices, and the pre-installed Google Search app and associated widgets on Android). Such prohibition should be effective, e.g., equally apply to bundling agreements with third-parties,<sup>16</sup> backed by an anti-circumvention provision, tight regulatory control, and the ability for the Commission to proactively impose a remedy driven by consumer preference (see recommendation #8). **That way, substitutes that only serve to entrench the gatekeeper's position, such as Google's current Android search preference menu, would be prohibited and replaced with successful implementations.** The regulator should also be empowered to counter other strategies gatekeepers might deploy to maintain market dominance via self-preferencing (e.g., the exclusion of Google's Pixel phones from a preference menu incentivizes Google to funnel consumers to Pixel phones).

\*\*\*\*\*

***DMA recommendation #7: banning the acquisition of default settings by gatekeepers on third-party CPS.***

- The ban on gateway default settings mentioned above should also apply to **gatekeepers acquiring a default setting for a CPS on another gatekeeping platform** – for example, Google Search on Apple's iOS. It should be considered an 'absolute' obligation in article 5.

**Google leverages its vast financial resources to control all default search access points on mobile.** Google each year pays Apple billions of dollars in order to be set as default general search engine on Safari, Siri, and Spotlight.<sup>17</sup> Because this denies rivals the ability to compete on the same scale in the market, which is characterized by strong network effects, gatekeepers should not be allowed to mutually reinforce their competitive positions.

\*\*\*\*\*

---

<sup>16</sup> In the Android decision, the Commission considered Google's agreements with Original Equipment Manufacturers (OEM) for pre-installing its Chrome browser and its search service as a form of indirect self-preferencing practice of equivalent effect.

<sup>17</sup> According to the US Department of Justice, the public estimates of the Apple-Google deal range around USD 8-12 billion annually. "The revenues Google shares with Apple make up approximately 15–20 percent of Apple's worldwide net income." [Justice Department Sues Monopolist Google For Violating Antitrust Laws](#), October 2020.

***DMA recommendation #8: putting consumers on the driving seat.***

- Recital (46) already specifies that gatekeepers use pre-installation to favor their own services. The recital should go further and suggest that a genuine consumer choice architecture, such as in the form of an easily accessible preference menu, may be an appropriate substitute to abusive CPS defaults.

**We think well-designed preference menus are an excellent fix to gateway defaults** and should be mandated, with granular attention to design and implementation.<sup>18</sup> In mobile, we showed that a preference menu that changes all search defaults and includes the most common Google alternatives can deliver meaningful search engine choice to consumers and significantly increase competition in the search market. **Using our proposed design, 24% of Europeans choose a Google alternative, which is 8 times higher than the 3% today.**<sup>19</sup>

We also believe that the regulator should be able to **mandate preference menus to all existing users at once** in order to swiftly address competition problems, and not just progressively over time. For example, with Android devices, Google delayed the preference menu for over 19 months after the liability decision, and then only displayed the search preference menu on some new devices. While Google has apparently claimed that it is impossible to display an effective preference menu on existing devices (i.e., one that would change all the search defaults including the home screen search bar), we find this hard to believe given the common practice of pushing out important Android software updates for other reasons that change all aspects of the device software (e.g., recent COVID exposure notification updates). Even if technological or contractual barriers prevent a change to the home screen search bar on existing devices, those barriers certainly do not prevent Google from displaying an alert box on existing devices to change the Chrome search default or replace the Google app with an alternative within the Play Store.<sup>20</sup>

---

<sup>18</sup> We commend the analysis of the UK Competition and Market Authority (CMA). In its [landmark market study on online platforms and digital advertising](#), the CMA argued that the regulator should have the power to enforce such positive obligations, including to “introduce choice screens.”

<sup>19</sup> <https://spreadprivacy.com/search-preference-menu-research/>

<sup>20</sup> Google did so in Russia in April 2017: “*For the devices that are currently circulating on the Russian market, Google will develop an active ‘choice window’ for the Chrome browser which at the time of the next update will provide the user with the opportunity to choose their default search engine.*” See the [Russian antitrust regulator’s decision](#)

\*\*\*\*\*

***DMA recommendation #9: interoperability enabling consumer choice.***

- Article 6.1.f states that gatekeepers should “*allow business (...) access to and interoperability with the same operating system, hardware or software features that are available or used in the provision by the gatekeeper (...)*”.
- This is a helpful provision, but recital (52) should clarify that this also applies to accessing default settings in a simple, programmatic way and change all of the device’s defaults.
- Article 6.1.c which would “*allow the installation and effective use of third-party software applications or software application stores*”, means that **the above-mentioned ‘one-click default switch’ would also enable direct app installation**, without the intermediation of the gatekeeper’s app store.

In practice, such obligations mean that the Chrome browser and the Android operating system would be updated such that consumers can easily change their search engine themselves across the whole device by a simple click (i.e., get back to the preference menu setting). We would be able to prompt the consumer (e.g., “do you want to change your default search engine to DuckDuckGo? click here”) to jump directly to the preference menu such that, if the consumer selects DuckDuckGo, all those defaults would change at once with one tap and our app would be downloaded. Instead, these are currently multi-step, non-intuitive changes, with the home search screen bar change not even possible without very advanced technology skills.<sup>21</sup>

**The regulator should also address practices that unfairly draw consumers back to the dominant platform.** For instance, certain Android features (like Google Assistant and other Google widgets) and other Google products (like Gmail), coupled with Google prompts to users (such as pop-up boxes), can have such effect in search.

\*\*\*\*\*

***DMA recommendation #10: end the data advantage in the search market.***

---

<sup>21</sup> DuckDuckGo’s SpreadPrivacy blog, October 14<sup>th</sup>, 2020: “Dear Google: We Agree Search Competition Should Be “Only 1 Click Away” – So Why Is It 15+ on Android?” <https://spreadprivacy.com/one-click-away/>

- Article 6.1.j states that gatekeepers should “*provide to any third party providers of online search engines, upon their request, with access on fair, reasonable and non-discriminatory terms to ranking, query, click and view data in relation to free and paid search generated by end users on online search engines of the gatekeeper (...)*”.
- We strongly support this provision, which can be instrumental in opening up the search market. But because it would be such a complex endeavor, recital (56) should clarify that this would require the technical cooperation of industry players and the involvement of the regulator, which might need to look into syndication contracts and potentially reject non-satisfactory schemes.

In the general search market, Google’s billions of daily user queries means it accumulates invaluable data on users’ preferences and is able to refine its search results at a larger scale. The UK CMA previously suggested that the regulator should therefore be empowered to “*require Google to provide click and query data to third-party search engines to allow them to improve their search algorithms.*”<sup>22</sup> In our White Paper on the Search Engine Market, we further explain the strategic importance of such data, whose access would necessitate untangling a complex web of commercial and legal barriers.<sup>23</sup>

\*\*\*\*\*

***DMA recommendation #11: end bad data collection practices in both the DMA and the DSA.***

- Recital (61) rightly notes that consumer profiling practices help gatekeepers entrench their position while harming people’s rights. But the corresponding Article 13 doesn’t live up to this logic since it merely mandates transparency on such practices.
- Article 13 of the **DMA should ban such practices for gatekeepers**, just as the **Digital Services Act should bring an end to pervasive data collection and user profiling for the purpose of behavioral advertising**.
- Such prohibition would naturally strengthen article 5.1.a, which we welcome: gatekeepers should “*refrain from combining personal data sourced from these core platform services with personal data from any other services offered by the gatekeeper or with personal data from third-party services, and from signing in end users to other services of the gatekeeper in order to combine personal data (...)*”.

---

<sup>22</sup> [Online platforms and digital advertising – Market study](#), CMA, July 1<sup>st</sup>, 2020

<sup>23</sup> <https://docs.house.gov/meetings/JU/JU05/20190716/109793/HHRG-116-JU05-20190716-SD021.pdf>

**We support a prohibition of pervasive user tracking for the purpose of behavioral advertising, in line with the advice of the European Data Protection Supervisor of February 10, 2021.**<sup>24</sup> The monetization of personal data fundamentally incentivizes viral content and traps people into “filter bubbles”.<sup>25</sup> At minimum, legal effect should be given to opt-out preferences expressed by users, including through centralized browser settings such as the Global Privacy Control.<sup>26</sup> The GDPR leaves the door open for such legal effect, which should be asserted law.

**In reality, user profiling is not indispensable to provide users with more relevant organic results and make money through advertisement.** Our own business shows that it is possible to provide users with a competitive search experience and be robustly profitable, solely based on contextual advertising. Outlawing behavioral advertising (in whole or in part) would open up significant competition for advertising to these users, because they could only be served by contextual advertising. That method of advertising would finally get the investment it needs (from big corporations, venture capital, etc.) to compete on a level playing field with behavioral advertising.

**Separately, limiting the data sharing between business units for the dominant firms, e.g., no user data sharing between Google Search and YouTube or Instagram and Facebook,** would further increase competition in the digital advertising market by limiting the “data advantage” of gatekeepers.

\*\*\*\*\*

We applaud the Commission’s ambition to comprehensively address platform regulation, towards fair, competitive, and rights-protective digital markets. We stand ready to provide additional insights and data to lawmakers as they amend the Digital Markets Act.

---

<sup>24</sup> [EDPS Opinions on the Digital Services Act and the Digital Markets Act](#), European Data Protection Supervisor, February 10<sup>th</sup>, 2021

<sup>25</sup> <https://spreadprivacy.com/google-filter-bubble-study/>

<sup>26</sup> <https://spreadprivacy.com/announcing-global-privacy-control/>

**Katie McInnis**

Senior Public Policy Manager US  
Washington, DC  
kmcinnis@duckduckgo.com  
+1 803.429.8787

**Suggested Questions for the US House Judiciary Subcommittee on Antitrust, Commercial, and Administrative Law**

**in advance of the October 1, 2020 hearing:**

**Proposals to Strengthen the Antitrust Laws and Restore Competition Online**

Questions

1. According to DuckDuckGo, the private search engine alternative to Google, America would see a 20% change overnight in Google's search market share if we required [all smartphones] to display a preference menu to consumers to select their search engine. Why not do that instead of dedicating a decade of litigation in the courts? (See <https://spreadprivacy.com/search-preference-menu-research/>.)
2. Given Google's requirement that original equipment manufacturers make Google Search the default search setting, and given how unlikely as a practical matter that users will change default settings, hasn't the United Kingdom regulator recommended that Google be prohibited from buying or setting search defaults? (See [https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final\\_report\\_1\\_July\\_20\\_20\\_.pdf](https://assets.publishing.service.gov.uk/media/5efc57ed3a6f4023d242ed56/Final_report_1_July_20_20_.pdf).) Didn't the European Union and Russia already prohibit that practice? (EU: <https://www.cnbc.com/2019/08/02/google-to-let-eu-users-choose-their-default-search-provider-on-android.html> Russia: <https://mattstoller.substack.com/p/how-russian-antitrust-enforcers-defeated>) Why shouldn't we do that here in the US?
3. Due to Google's dominance in the online ad market and the pervasive use of the Google Analytics trackers, Google collects user data on 85% of the most visited websites. (See <https://www.eff.org/deeplinks/2020/03/google-says-it-doesnt-sell-your-data-heres-how-company-shares-monetizes-and>.) If properly drafted, wouldn't a ban on cross-context behavioral advertising effectively function as an antitrust behavioral remedy? Wouldn't that ban need to restrict Google's secondary use of consumer data collected on its own websites— for example, Google couldn't use your history of watching YouTube videos to decide what ads to show you while you are using Gmail? (See <https://www.wsj.com/articles/how-google-edged-out-rivals-and-built-the-worlds-dominant-ad-machine-a-visual-guide-11573142071>.)
4. As documented in Kashmir Hill's 2019 investigation, "Google touches almost everything on the internet." Don't you think this habituation and inability of the average consumer to live a normal life without encountering Google on an hourly basis a problem for a free and fair society? (See <https://gizmodo.com/i-cut-google-out-of-my-life-it-screwed-up-everything-1830565500>.)

5. Which of these antitrust enforcement methods do you support?
  - a) encouraging market participants to be pro-actively and transparently involved in remedy





DuckDuckGo.

design;

- b) using a government-funded monitor to prevent dark patterns designed to inhibit or manipulate consumer choice;
- c) empowering a regulator to impose a meaningful remedy of last resort, like structural separation
- d) using experimental remedies and A/B testing;
- e) iterative remedies, including interim and ex-post evaluation of remedies; and
- f) more vigorous enforcement of competition rules, including by using more prescriptive and restorative remedies.



**Duck Duck Go, Inc.**  
20 Paoli Pike • Paoli, PA 19301, United States  
+1 267.690.7758 • duckduckgo.com

**Katie McInnis**

Senior Public Policy Manager US  
Washington, DC  
kmcinnis@duckduckgo.com  
+1 803.429.8787

March 10, 2021

US Federal Trade Commission  
600 Pennsylvania Avenue NW  
Washington, DC 20580

**Re: *Bringing Dark Patterns to Light: An FTC Workshop***

Dear Sir or Madam:

In advance of your virtual workshop on April 29, 2021 to examine dark patterns, we respectfully recommend the Federal Trade Commission consider discussing or holding a panel on how dark patterns can affect competition in the online marketplace.

Dark patterns can be and have been wielded by companies to increase their market power. These designs can be used to maximize a company's ability to extract revenue from consumers or to steer consumers away from competitor services or providers. In both instances, consumer autonomy, control, and choice are undermined in the name of market dominance. How dark patterns affect competition in the market is underexamined,<sup>1</sup> and we urge the Federal Trade Commission to include a discussion on this topic.

### **How Dark Patterns Are Used to Extract More Revenue from Consumers**

Companies use dark patterns to maximize their ability to extract revenue from consumers. This revenue could be in the form of increased purchases but often is in the form of data. As the US House Antitrust Subcommittee report, *Investigation of Competition in Digital Markets*, notes, "the accumulation of data can serve as another powerful barrier to entry for firms in the digital economy" because access to data allows companies to target advertising, improve services, and identify and exploit new market opportunities.<sup>2</sup>

Cognizant of the benefit consumer data brings, companies often use dark patterns in consent dialogs or in the privacy settings they provide to consumers. By using dark patterns in consent dialogs or privacy settings,

---

<sup>1</sup> "The dark patterns literature has only provided limited commentary about competition concerns emerging from dark patterns." Arunesh Mathur, Jonathan Mayer, & Mihir Kshirsagar, *What Makes a Dark Pattern...Dark?*, CHI CONF. ON HUMAN FACTORS IN COMPUTING SYSTEMS (2021), <https://doi.org/10.1145/3411764.3445610>.

<sup>2</sup> *Investigation of Competition in Digital Markets, Majority Staff Report and Recommendations*, SUBCOMM. ON ANTITRUST, COMMERCIAL, & ADMIN. LAW OF THE COMM. ON THE JUDICIARY (Oct. 6, 2020), [https://judiciary.house.gov/uploadedfiles/competition\\_in\\_digital\\_markets.pdf](https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf).



companies are able to extract as much data as possible from consumers while appearing to give consumers control over their data.

### Dark Patterns in Consent Dialogs

Companies use dark patterns in cookie consent dialogs to maximize the amount of data they can extract from users by “increas[ing] the likelihood of users consenting to tracking.”<sup>3</sup> The House Antitrust Subcommittee report notes this tactic has “become a pervasive tool.”<sup>4</sup> These dark patterns are designed to not only subvert consumer choice, but also render consumer rights enshrined in law difficult to use or unusable.

For example, following the passage of the European Union’s General Data Protection Regulation, researchers found that dark patterns in the design of cookie consent notices “substantially affect people’s consent behavior.”<sup>5</sup> Many cookie consent dialogs in their research “offered no meaningful choice to consumers”<sup>6</sup> due to dark patterns. Therefore, the report concluded, “our findings demonstrate the importance for regulation to not just require consent, but also provide clear requirements or guidance for how this consent has to be obtained in order to ensure that users can make free and informed choices.”<sup>7</sup>

Dark patterns have also been used to undermine US consumers’ privacy rights in California. Consumer Reports found that dark patterns “significantly undermined consumers’ ability to opt out” of the selling of their personal information, a right created by the California Consumer Privacy Act.<sup>8</sup> Echoing the researchers in the EU, Consumer Reports also called for regulators to “more clearly prohibit dark patterns” to “make it easier” for consumers to opt out.<sup>9</sup>

By successfully coercing a consumer’s consent or making it hard or impossible to opt-out of the selling of one’s data, companies are able to collect more data from consumers, which benefits their position in the market. These dark patterns are, thus, not just antiprivacy but also anticompetitive.

---

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> Christine Utz, Martin Degeling, *et al.*, *(Un)informed Consent: Studying GDPR Consent Notices in the Field*, Proceedings of the 2019 ACM SIGSAC Conference on Computer and Communications Security (Nov. 2019), <https://doi.org/10.1145/3319535.3354212>.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> Maureen Mahoney, *California Consumer Privacy Act: Are Consumers’ Digital Rights Protected?*, CONSUMER REPORTS (Oct. 1, 2020), [https://advocacy.consumerreports.org/wp-content/uploads/2020/09/CR\\_CCPA-Are-Consumers-Digital-Rights-Protected\\_092020\\_vf.pdf](https://advocacy.consumerreports.org/wp-content/uploads/2020/09/CR_CCPA-Are-Consumers-Digital-Rights-Protected_092020_vf.pdf).

<sup>9</sup> *Id.*

## Dark Patterns of Design in Privacy Settings

Companies like Facebook and Google use privacy-intrusive defaults and dark patterns in consumer-facing privacy settings to maximize the amount of data they can extract from users.<sup>10</sup> Most users do not change default settings, so privacy-intrusive defaults allow companies to extract data from users without friction.<sup>11</sup> However, some users will change their defaults, so companies also employ dark patterns in design to ensure that it is difficult to do so.

A 2018 report<sup>12</sup> from the Norwegian Consumer Council (NCC) demonstrates how Facebook and Google create an illusion of consumer control over the consumer's data while simultaneously nudging and manipulating users into making choices that limit that control. The NCC found that most of the privacy protecting settings that Facebook and Google provide users are disabled by default and changing those defaults can take as many as 13 clicks for the user. As the report notes:

By giving users an overwhelming amount of granular choices to micromanage, Google has designed a privacy dashboard that, according to our analysis, actually discourages users from changing or taking control of the settings or delete bulks of data. Simultaneously, as noted above, the presence and claims of complete user control may incentivize users to share more data.

By successfully pushing consumers away from changing defaults or from using data collection and privacy controls, companies are able to collect more data from consumers, which benefits their position in the market. These dark patterns of design are anticompetitive as well as antiprivacy. Indeed, the ability of these companies to continuously extract more consumer data without inciting a backlash from consumers who want better protections over their data is a sign of their market dominance:

The persistent collection and misuse of consumer data is an indicator of market power in the digital economy. [...] The best evidence of platform market power therefore is not prices charged but rather the degree to which platforms have eroded consumer privacy without prompting a response from the market. As scholars have noted, a platform's ability to maintain strong networks while degrading user privacy can reasonably be considered equivalent to a monopolist's decision to increase prices or reduce product quality. A firm's dominance can enable it to abuse consumers' privacy without losing customers. In the absence of genuine competitive threats, a firm offers fewer

---

<sup>10</sup> Geoffrey Fowler, *Hands off my data! 15 default privacy settings you should change right now*, Wash. Post (June 1, 2018), <https://www.washingtonpost.com/news/the-switch/wp/2018/06/01/hands-off-my-data-15-default-privacy-settings-you-should-change-right-now/>.

<sup>11</sup> Lena V. Groeger, *Set It and Forget It: How Default Settings Rule the World*, PROPUBLICA (July 27, 2016), <https://www.propublica.org/article/set-it-and-forget-it-how-default-settings-rule-the-world>.

<sup>12</sup> *Deceived by Design: How Tech Companies Use Dark Patterns to Discourage Us from Exercising Our Rights to Privacy*, NORWEGIAN CONSUMER COUNCIL (June 27, 2018), <https://www.forbrukerradet.no/side/facebook-and-google-manipulate-users-into-sharing-personal-data/>.

privacy protections than it otherwise would. In the process, it extracts more data, further entrenching its dominance.<sup>13</sup>

Without an intervention against these dark patterns of design or a general privacy law restricting what information companies can collect, consumers will be forced to share private information with big companies like Google and Facebook or else cease using their services entirely. In this take-it-or-leave-it environment where consumers also lack the necessary information to compare companies' privacy practices, consumers are left with little, if any, tools to control the sharing of their information. Thus, consumers' control over the privacy of their data is, in this market-dominated context, illusory because the consumer is being actively persuaded to not even use the weak tools provided to them.<sup>14</sup> As Professors Gregory Day and Abbey Stemler posit in their forthcoming article *Are Dark Patterns Anticompetitive?*, “the concept of behavioral autonomy may soon become a reflection of market quality, given the dangers of online manipulation.”<sup>15</sup>

### **How Dark Patterns Steer Consumers Away from Competitors**

Dark patterns can be and have been used by market dominant actors to steer consumers away from competitors, thus benefiting a company's access to data and position in the market. For example, the House Antitrust Subcommittee report details how Google used a dark pattern to prompt users to “Add Google Meet video conferencing” to an event on Google calendar to nudge users away from competitor video conferencing services from companies like Zoom. As the report notes, this dark pattern was introduced only when remote work became commonplace due to the COVID-19 pandemic and Zoom emerged as the market leader in video conferencing.

Companies also use dark patterns to introduce friction as a way of steering consumers away from competitors. For instance, Google search is the default search engine on Android mobile devices. To change the default search engine to another provider, the user must make more than 15 clicks.<sup>16</sup> This fact, combined with the reality that most consumers do not change their defaults, means that only highly motivated users will be able to make the switch. Dark patterns in privacy settings, therefore, affect not only the consumer's ability to protect their privacy

---

<sup>13</sup> *Investigation of Competition in Digital Markets*, *supra* note 2.

<sup>14</sup> Work from the Norwegian Consumer Council and Consumer Reports demonstrates how weak these controls are. See *Deceived by Design: How Tech Companies Use Dark Patterns to Discourage Us from Exercising Our Rights to Privacy*, NORWEGIAN CONSUMERS COUNCIL (June 27, 2018), available at <https://www.forbrukerradet.no/side/facebook-and-google-manipulate-users-into-sharing-personal-data/> and Katie McInnis, *Consumers Union urges FTC to examine Facebook privacy controls, citing new CU research*, CONSUMER REPORTS ADVOCACY (June 27, 2018), [https://advocacy.consumerreports.org/press\\_release/consumers-union-urges-ftc-to-examine-facebook-privacy-controls-citing-new-cu-research/](https://advocacy.consumerreports.org/press_release/consumers-union-urges-ftc-to-examine-facebook-privacy-controls-citing-new-cu-research/).

<sup>15</sup> Gregory Day & Abbey Stemler, *Are Dark Patterns Anticompetitive?* ALA. LAW REV. forthcoming (Oct. 11, 2019), <https://www.law.ua.edu/lawreview/files/2020/11/1-DayStemler-1-45.pdf>.

<sup>16</sup> *Dear Google: We Agree Search Competition Should Be “Only 1 Click Away”—So Why Is It 15+ on Android?*, DUCKDUCKGO (Oct. 14, 2020), <https://spreadprivacy.com/one-click-away/>.



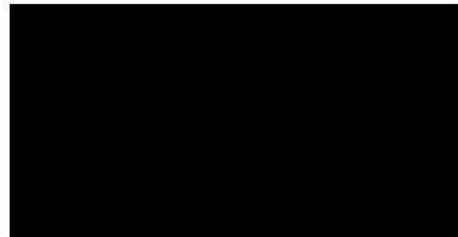
but also use to competitor services. These competitor services may also provide the user with better privacy protections if the user is switching to a privacy-protective search engine like DuckDuckGo.

The extent to which dark patterns have been used to steer consumers away from competitors is understudied but significantly affects the ability of new entrants to enter the market and compete on privacy.

---

Thank you for this opportunity to respond to the Commission's request for recommendations for discussion topics in advance of the workshop. We respectfully submit ourselves for consideration for an upcoming panel. In addition, we would be happy to discuss other possible panelists for a panel discussion of how dark patterns affect competition.

Sincerely,



# Choice Screen Auctions

Michael Ostrovsky\*

Stanford University and NBER

ostrovsky@stanford.edu

November 7, 2020

## Abstract

Choice screen auctions have been recently deployed in 31 European countries, allowing consumers to choose their preferred search engine on Google’s Android platform instead of being automatically defaulted to Google’s own search engine. I show that a seemingly minor detail in the design of these auctions—whether they are conducted on a “per appearance” or a “per install” basis—plays a major role in the mix and characteristics of auction winners, and, consequently, in their expected overall market share. I also show that “per install” auctions distort the incentives of alternative search engines toward extracting as much revenue as possible from each user who installs them, at the expense of lowering the expected number of such users. The distortion becomes worse as the auction gets more competitive and the number of bidders increases. Empirical evidence from Android choice screen auctions conducted in 2020 is consistent with my theoretical results.

---

\*I thank Anirudha Balasubramanian, Jeremy Bulow, Suraj Malladi, Andy Skrzypacz, and Frank Yang for helpful comments and suggestions.

# 1 Introduction

Optimal regulation of digital platforms is one of the thorniest issues in competition policy. A particularly challenging dimension for regulation is the fact that dominant platforms are often active in multiple distinct businesses and may leverage their position in one area into gaining an advantage in another. The net effect of such leverage on consumer welfare is often ambiguous and hard to determine. On one hand, a dominant platform’s expertise and technological complementarities may make the adjacent product genuinely superior to the alternatives. On the other hand, such leverage may make it harder for other firms to successfully compete, even if their products, on their own, would be preferred by some consumers to that of the platform.

These linkages across product lines have led regulators to sometimes propose extreme measures to regulate large digital platforms, all the way to breaking them up and prohibiting them from entering certain lines of business. Notable examples in the U.S. include the Microsoft case of the late 1990s, in which the initial court decision was to break up the company,<sup>1</sup> and the recently concluded congressional investigation into the business practices of Amazon, Apple, Facebook, and Google, which proposes “structural separations and line of business restrictions” as a solution for “restoring competition in the digital economy.”<sup>2</sup> Regulators in the European Union and other parts of the world have often reached similar conclusions. Of course, the breakup of a company is a very heavy-handed solution, difficult to implement, rife with potential unintended consequences, and, unsurprisingly, adamantly

---

<sup>1</sup>United States v. Microsoft Corp., 97 F. Supp. 2d 59 (D.D.C. 2000), <https://law.justia.com/cases/federal/district-courts/FSupp2/97/59/2339529/>.

<sup>2</sup>“To address this underlying conflict of interest, Subcommittee staff recommends that Congress consider legislation that draws on two mainstay tools of the antimonopoly toolkit: structural separation and line of business restrictions. Structural separations prohibit a dominant intermediary from operating in markets that place the intermediary in competition with the firms dependent on its infrastructure. Line of business restrictions, meanwhile, generally limit the markets in which a dominant firm can engage.” (Section VI.A.I, [https://judiciary.house.gov/uploadedfiles/competition\\_in\\_digital\\_markets.pdf](https://judiciary.house.gov/uploadedfiles/competition_in_digital_markets.pdf).)



opposed by the digital platforms.<sup>3</sup>

In light of these problems, platforms and regulators have, in some cases, adopted a more “lightweight” alternative as a compromise solution: choice screens. The logic of a choice screen is straightforward: instead of having the consumer use the dominant platform’s product automatically and by default, the platform agrees to present the consumer with a menu of choices. This menu includes the platform’s own product as one of the options, but also includes several competing products as alternatives. Consumers can then choose whichever products they prefer, leveling the playing field between the dominant platform and its competitors.

Choice screens for Web browsers on the Windows platform were first proposed by Microsoft in 1999 as a remedy in its negotiations with the U.S. Department of Justice.<sup>4</sup> They were not adopted at that time, but were subsequently accepted as a compromise solution between the European Commission and Microsoft in 2009, and were displayed to users in Europe from 2010 until 2014.<sup>5</sup> (Due to a technical error, the choice screen was not displayed

---

<sup>3</sup>To give just one recent example (out of many available ones): “A government effort to break up Facebook Inc. from Instagram and WhatsApp would defy established law, cost billions of dollars and harm consumers, according to a paper company lawyers have prepared in the wake of rising antitrust legal threats. [...] In the paper, Facebook says unwinding the deals would be nearly impossible to achieve, forcing the company to spend billions of dollars maintaining separate systems, weakening security and harming users’ experience.” (<https://www.wsj.com/articles/facebook-says-government-breakup-of-instagram-whatsapp-would-be-complete-nonstarter-11601803800>.)

<sup>4</sup><https://www.wired.com/2000/11/microsoft-7/>.

<sup>5</sup>“Under the commitments approved by the Commission, Microsoft will make available for five years in the European Economic Area [...] a “Choice Screen” enabling users of Windows XP, Windows Vista and Windows 7 to choose which web browser(s) they want to install in addition to, or instead of, Microsoft’s browser Internet Explorer. ...

The Commission’s preliminary view was that competition was distorted by Microsoft tying Internet Explorer to Windows. This was because it offered Microsoft an artificial distribution advantage not related to the merits of its product on more than 90 per cent of personal computers. Furthermore, the Commission’s preliminary view was that this tying hindered innovation in the market and created artificial incentives for software developers and content providers to design their products or web sites primarily for Internet Explorer.

The approved commitments address these concerns. PC users, by means of the Choice Screen, will have an effective and unbiased choice between Internet Explorer and competing

on one of the versions of Windows from May 2011 to July 2012, affecting approximately 15 million users. Microsoft admitted its responsibility for this error and was subsequently fined €561 million.<sup>6</sup>) In 2017, Google reached a settlement with the competition authority in Russia to display choice screens for the default search engine on the Android platform there.<sup>7</sup> A similar agreement was reached between Google and the European Commission following a €4.3 billion fine imposed on the company by the Commission in 2018,<sup>8</sup> and Google began displaying choice screens for both default search engines and web browsers to Android users in Europe in 2019.<sup>9</sup>

Choice screen menus can be an effective and powerful tool. For instance, following the 2010 introduction of browser choice screen menus on the Windows platform in Europe, the number of downloads of Opera Software’s web browser more than doubled.<sup>10</sup> Discussing Google’s introduction of choice screen menus on Android, the European Commissioner for web browsers. This should ensure competition on the merits and allow consumers to benefit from technical developments and innovation both on the web browser market and on related markets, such as web-based applications.” ([https://ec.europa.eu/commission/presscorner/detail/en/IP\\_09\\_1941](https://ec.europa.eu/commission/presscorner/detail/en/IP_09_1941).)

<sup>6</sup>[https://ec.europa.eu/commission/presscorner/detail/en/IP\\_13\\_196](https://ec.europa.eu/commission/presscorner/detail/en/IP_13_196).

<sup>7</sup><https://www.reuters.com/article/us-alphabet-google-russia-idUSKBN17J11C>, <https://yandex.com/blog/yacompany-com/choosing-yandex-search-on-android>.

<sup>8</sup> “The Commission decision has concluded that Google has engaged in two instances of illegal tying:

First, the tying of the Google Search app. As a result, Google has ensured that its Google Search app is pre-installed on practically all Android devices sold in the EEA. Search apps represent an important entry point for search queries on mobile devices. The Commission has found this tying conduct to be illegal as of 2011, which is the date Google became dominant in the market for app stores for the Android mobile operating system.

Second, the tying of the Google Chrome browser. As a result, Google has ensured that its mobile browser is pre-installed on practically all Android devices sold in the EEA. Browsers also represent an important entry point for search queries on mobile devices and Google Search is the default search engine on Google Chrome. The Commission found this tying conduct to be illegal as of 2012, which is the date from which Google has included the Chrome browser in its app bundle.” ([https://ec.europa.eu/commission/presscorner/detail/en/IP\\_18\\_4581](https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581).)

<sup>9</sup><https://www.blog.google/around-the-globe/google-europe/presenting-search-app-and-browser-options-android-users-europe/>.

<sup>10</sup><https://press.opera.com/2010/03/18/opera-more-than-doubles-download-numbers-in-europe-after-choice-screen-introduction/>.

Competition, Margrethe Vestager, stated, “We’ve seen in the past that a choice screen can be an effective way to promote user choice.”<sup>11</sup> However, from the point of a company that owns the platform, the initial implementations of choice screen menus suffered from one serious shortcoming: zero revenue. This may be a particularly salient issue in the case of search engines. First, being chosen by a consumer is extremely valuable to a search engine due to the advertising revenues it expects to receive when the consumer uses it. Second, the dominant company itself may be making large payments to *another* platform to have consumers use its search engine there.<sup>12</sup> In this case, it is logical for the company to argue that it should be allowed to charge others for the right to have their products be shown on its platform’s choice screens—and a natural way to do so is via an auction.

That is the decision that Google announced in August 2019,<sup>13</sup> and the first “choice screen auctions” took place in early 2020. The basic rules of Google’s choice screen auctions are very simple.

In each country auction, search providers will state the price that they are willing to pay each time a user selects them from the choice screen in the given country. The three highest bidders will appear in the choice screen for that country. The provider that is selected by the user will pay the amount of the fourth-highest bid.<sup>14</sup>

In the same document, Google explains why it chose to auction off slots in the choice screen this way:

---

<sup>11</sup>[https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT\\_19\\_1774](https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_19_1774).

<sup>12</sup>While the companies do not directly disclose these numbers, analysts estimate that Google is paying Apple an amount on the order of \$10 billion dollars per year to have Google be the default search engine on Apple’s Safari browser (<https://finance.yahoo.com/news/google-pay-apple-12-billion-155007747.html>). It is worth noting that this agreement itself has also been a subject of recent regulatory scrutiny (<https://www.justice.gov/opa/press-release/file/1328941/download>).

<sup>13</sup><https://www.blog.google/around-the-globe/google-europe/update-android-search-providers-europe/>.

<sup>14</sup><https://www.android.com/choicescreen/>.

Q: Why does Google use an auction to determine the search providers that appear in the choice screen?

A: An auction is a fair and objective method to determine which search providers are included in the choice screen. It allows search providers to decide what value they place on appearing in the choice screen and to bid accordingly.

The auction revenues help us to continue to invest in developing and maintaining the Android platform.

In this paper, I show that a seemingly minor detail of the implementation of choice screen auctions plays a major role in their outcomes—and thus in the overall effectiveness of the antitrust remedy. Specifically, while the answer in the Q&A section of the document states that an auction “allows search providers to decide what value they place on appearing in the choice screen and to bid accordingly,” the auction, as implemented, charges these providers not for *appearing* in the choice screen but for *being chosen by a user*.

While the difference may seem to be just a matter of language, it is not. To see the intuition for the difference, consider a version of the auction with just one available spot and two bidders. Bidder A gets revenue \$10 from each user who installs its search engine, and if it is shown as an option in the choice screen, then the probability that a user will choose it is 10%. Bidder B gets revenue \$20 from each user who installs its search engine, but the probability that a user will choose it (if it is shown as an option in the choice screen) is only 1%. The value that bidder A has for appearing on the screen is therefore \$1, and the value that bidder B has for appearing on the screen is \$0.20. Thus, if the auction is conducted on the “per appearance” basis, then bidder A will win, will pay \$0.20 per appearance, and will have its search engine chosen by users 10% of the time, while the dominant platform’s own search engine will be chosen 90% of the time. If, instead, the auction is conducted as implemented, with bidding and payment on the “per install” basis, then bidder B will win and will pay \$10 every time its search engine is chosen (corresponding to \$0.10 per appearance). The winner’s search engine will be chosen only 1% of the time,

and the dominant platform's one will be chosen the remaining 99% of the time. Thus, relative to the per appearance auction, the per install auction results in a lower likelihood that an alternative search engine will be chosen by the user (making it correspondingly more attractive to the dominant platform) and gives advantage to search engines that generate higher revenue per user vs. those that are more popular but generate less revenue on a per-user basis. In Section 2, I show that these conclusions hold more generally, in a basic model in which alternative search engines differ on two dimensions: revenue per user (i.e., how much revenue the search engine generates, on average, when a user chooses to install it) and popularity (i.e., the likelihood that the search engine will be chosen if it is shown to the user in the choice screen). Moreover, I show that the difference is exacerbated by competition. As the number of alternative search engines grows, under the per appearance auction, the expected popularity of the winner also grows, and the probability that the dominant platform's own search engine is chosen decreases. By contrast, under the per install auction, these measures are not affected by the number of bidders.

In the example above and in the model of Section 2, a search engine's popularity and revenue per user (RPU) are fixed. In practice, a search engine has some ability to trade them off against each other. For instance, a search engine may choose to show more intrusive ads, increasing its revenue per user but decreasing its popularity. Conversely, a search engine may donate some of its proceeds to charity or implement very strict privacy rules, lowering its revenue per user but increasing the probability that a user will choose it. I introduce this possibility in Section 3 and show that the two auction formats result in very different incentives to the search engines regarding this tradeoff. Under the per appearance auction, each bidder chooses the same point on the popularity–RPU frontier as it would choose if it were the only bidder (and were thus guaranteed the spot on the choice screen). In particular, this implies that just as in the model of Section 2, as the number of competitors increases, the expected popularity of the winner also increases, and the expected probability that the dominant platform's search engine is chosen goes down. By contrast, under the per install

auction, each bidder has a strong incentive to distort the choice toward higher revenue per each user who chooses the product, at the expense of lowering the probability of actually being chosen. This distortion grows stronger as the number of bidders grows. In the limit, as that number approaches infinity, the distortion results in a “race to the bottom,” with all bidders pushing to the extreme point on the popularity–RPU frontier: the highest possible RPU and the lowest possible popularity. As a result, the expected popularity of the winner goes in the opposite direction vs. that in the case of the per appearance auction, minimizing the probability that an alternative search engine will be chosen.

In Section 4, I present empirical evidence from the first three sets of choice screen auctions (for the periods of March–June 2020, July–September 2020, and October–December 2020) conducted by Google in 31 European countries. The evidence is consistent with my theoretical conclusions. In particular, to mention just one data point from the section, the search engine that was most successful in these auctions, winning a slot in every country and in every period, has been installed fewer than 50,000 times *worldwide* and has so few user ratings that Google’s Play Store does not provide statistics on those ratings. For the sake of comparison, Google’s own search app has been installed more than 5 billion times, while alternative search engines Bing (produced by Microsoft) and DuckDuckGo (produced independently and focused on user privacy) have been installed more than 10 million times. (These numbers include all installs, including those that come from choice screens and those that do not.)

Section 5 concludes.

## 1.1 Related Literature

Two recent surveys by Crémer et al. (2019) and Scott Morton et al. (2019) provide extensive discussions of the challenges of regulating digital platforms, potential remedies, and other related issues. On the specific issue of choice screens (without auctioning off the slots), Economides and Lianos (2011) provide a discussion of the 2009 Microsoft–EU

agreement regarding the Windows platform and the Internet Explorer web browser.

On the issue of search engine monetization, see Edelman et al. (2007) and Varian (2007). These papers also contain discussions of search engines adjusting advertisers’ “per click” bids by their estimated probabilities of being clicked, essentially transforming those “per click” auctions into “per appearance” ones. For a more detailed discussion of various adjustment factors and their impact on search engine revenues in the context of online advertising, see Lahaie and Pennock (2007).

In the “choice screen” setting, the “per appearance” auction can be viewed as an implementation of the Vickrey–Clarke–Groves mechanism (Vickrey, 1961; Clarke, 1971; Groves, 1973), with the right to be shown on the choice screen being the object auctioned off. VCG is known to preserve various incentives (e.g., pre-auction investment or information acquisition), even in cases in which other auction formats may not (Rogerson, 1992; Bergemann and Välimäki, 2002; Arozamena and Cantillon, 2004; Hatfield et al., 2014, 2018). As I show in Section 3.1, the per appearance auction in the choice screen setting likewise has an “incentive-preserving” feature: it does not distort the incentives of the bidders regarding the choice of the optimal balance between popularity and revenue-per-user, while the per install auction does (with the distortion growing larger as the number of bidders grows).

## 2 Basic Model: Exogenous Popularity and Revenue-per-User

A platform is auctioning off the right to be shown on the choice screen. There is one slot available, next to the platform’s own product.<sup>15</sup> There are  $n = 2$  bidders,  $i \in \{1, 2\}$ . Each bidder  $i$  has an exogenously determined *popularity*  $q_i$  and if its product is chosen by a user, then bidder  $i$  receives revenue  $r_i$  from that. Variables  $q_i$  and  $r_i$  are private information of

---

<sup>15</sup>In Google’s Android choice screen auctions, there are three slots next to the platform’s own listing. I consider the case of only one alternative slot for simplicity; this assumption does not qualitatively change my conclusions.

bidder  $i$ . Variables  $q_1, q_2, r_1,$  and  $r_2$  are independently and identically distributed, and each is drawn from the uniform distribution on  $[0, 1]$ .

If a product of popularity  $q$  is shown to a user, then it is chosen with probability  $q$ . The platform gets benefit  $\pi > 1$  if its own product is chosen, and the auction payment if the user chooses an alternative.<sup>16</sup>

Under the “per appearance” auction, each bidder submits a bid for the right to be shown to users. The bidder with the highest bid wins, is shown on the choice screen next to the platform’s own product, and pays the amount equal to the bid of the second-highest bidder.

Under the “per install” auction, each bidder submits a bid. The bidder with the highest bid wins, is shown on the choice screen next to the platform’s own product, and pays the amount equal to the bid of the second-highest bidder *if the user chooses its product*.

Note that both auction formats are incentive-compatible: it is a dominant strategy for each bidder to submit its valuation truthfully.<sup>17</sup> That is, under the “per install” auction, each bidder  $i$  will bid  $r_i$ , while under the “per appearance” auction, each bidder  $i$  will bid  $q_i r_i$ .

To characterize the distribution of outcomes in the per appearance auction, we need to perform some calculations.

First, observe that the unconditional distribution of each bid  $b_i = q_i r_i$  is given by the CDF  $G(x) = x - x \ln x$  and the corresponding density function  $g(x) = -\ln x$  (for  $x \in (0, 1]$ ).<sup>18</sup> Thus, for a bidder with type  $(q, r)$ , the probability of winning the auction is  $(qr) - (qr) \ln(qr)$ . For the population of bidders with type  $q$  and with types  $r$  distributed uniformly on  $[0, 1]$ , the probability of winning is therefore  $\int_0^1 ((qr) - (qr) \ln(qr)) dr = q \int_0^1 (r - r \ln q - r \ln r) dr = q \left( \frac{1}{2} - \frac{1}{2} \ln q + \frac{1}{4} \right) = \frac{3}{4}q - \frac{1}{2}q \ln q$ .<sup>19</sup> We can now calculate the expected popularity of the

---

<sup>16</sup>I.e., the platform’s most preferred outcome is to have its own product chosen by a user; after all, if that was not the case, there would be no need for the antitrust remedy.

<sup>17</sup>I will ignore other equilibria of these auctions.

<sup>18</sup>For  $x \in [0, 1]$ , the probability that  $q_i r_i$  is less than or equal to  $x$  is equal to  $G(x) = x + \int_x^1 \frac{x}{q} dq = x + x(\ln 1 - \ln x) = x - x \ln x$ .

<sup>19</sup>This calculation uses the fact that  $\int x \ln x = \frac{1}{2}x^2 \ln x - \frac{x^2}{4} + c$ . In the next step, we will



winner of the auction, which is equal to  $2 \int_0^1 q \left( \frac{3}{4}q - \frac{1}{2}q \ln q \right) dq = \int_0^1 \frac{3}{2}q^2 dq - \int_0^1 q^2 \ln q dq = \frac{1}{2} + \frac{1}{9} = \frac{11}{18}$ .<sup>20</sup>

The expected payment made by the winner of the auction is equal to  $E[\min\{q_1 r_1, q_2 r_2\}]$ . Given the distribution  $G(\cdot)$  of each  $q_i r_i$  derived above, the distribution of  $\min\{q_1 r_1, q_2 r_2\}$  is given by  $G(x)^2 + 2G(x)(1 - G(x))$ , with the corresponding density  $2g(x) - 2g(x)G(x) = -2 \ln x(1 - x + x \ln x)$ . Thus,  $E[\min\{q_1 r_1, q_2 r_2\}] = -2 \int_0^1 (x \ln x(1 - x + x \ln x)) dx = \frac{7}{54}$ , and the expected payoff of the platform is  $\frac{7}{54} + \frac{7}{18}\pi$ .

Characterizing the outcomes of the per install auction is straightforward. Under this format, the expected popularity of the winner is  $1/2$ —it is independent of the bids in the auction and plays no role in determining the winner. This is lower than the expected popularity of the winner in the per appearance auction ( $\frac{11}{18}$ ), and thus the probability that an alternative product will be chosen is reduced and the probability that the dominant platform’s product is chosen is increased.

The expected per install payment made by the winner is  $1/3$  (and is independent of its popularity), and the expected payoff of the platform in the per install auction is therefore  $1/6 + 1/2\pi$ , which is higher than its expected payoff in the per appearance auction ( $\frac{7}{54} + \frac{7}{18}\pi$ ).

The contrast between the outcomes of the per appearance and per install auctions becomes even more striking if the number of bidders,  $n$ , becomes large; i.e., the number of potential alternative products grows. It is immediate that as  $n$  grows, the expected popularity of the winner of the per appearance auction converges to one: the highest possible popularity. By contrast, the expected popularity of the winner of the per install auction remains unchanged, at one half; under that format, the increase in the competition has no impact on the popularity of the winner, and thus on the probability that an alternative

---

also use the fact that  $\int x^2 \ln x = \frac{1}{3}x^3 \ln x - \frac{x^3}{9} + c$ .

<sup>20</sup>The logic behind this formula is that by symmetry, (the expected popularity of the winner of the auction) is equal to (the expected popularity of the winner of the auction conditional on that winner being bidder 1). The latter expression is equal to  $\frac{\int_0^1 q_1 \text{Prob}(\text{bidder 1 is the winner of the auction} | q_1) dq_1}{\text{Prob}(\text{bidder 1 is the winner of the auction})}$ , whose denominator is equal to  $\frac{1}{2}$ .

product will be chosen. Of course, if the platform’s payoff from having a user choose its own product is higher than the revenue that an alternative product generates, this outcome is preferred by the platform, just as it was in the case of  $n = 2$ .

### 3 Extension: Endogenous Popularity and Revenue-per-User

It is clear from the results of Section 2 that the choice between per install and per appearance auction formats is a first-order issue. However, that only tells a part of the story. In this section, I consider the incentives of bidders to choose between making their product more attractive to users (at the expense of lower per-user revenue) vs. moving in the opposite direction. This is an important issue for the case of default search engines on a platform. Search engines may be able to increase their popularity by reducing the intrusiveness of ads, enhancing privacy protections, or donating their advertising revenue to charitable causes. These measures, while making the search engine more attractive to users, reduce the revenue it makes from each one of them. In this section, I show that the issues discussed in Section 2 are exacerbated once these incentives are taken into account; in some cases, dramatically so.

I maintain most of the assumptions of Section 2 and make only one change. Instead of assuming that each bidder  $i$  has an exogenously given popularity  $q_i$  and revenue-per-user  $r_i$ , I assume that each bidder has an exogenously given type  $t_i$  drawn independently from the uniform distribution  $F(t)$  on  $[0, 1]$  (with the corresponding density function  $f(t)$ ). The bidder can then select its popularity  $q_i$  from  $[0, t_i]$  and its revenue-per-user is then equal to  $r_i = t_i - q_i$ . After making this decision, the bidder submits its auction bid as before.

Bidding decisions are still straightforward under both rules: it is optimal to bid truthfully in both per appearance and per install auctions. However, each bidder now needs to decide, given its type  $t_i$ , how much of that type to allocate to popularity  $q_i$  and how much to allocate

to revenue-per-user. I work out the resulting equilibria in the next two subsections.

### 3.1 Per Appearance Auction

Consider a per appearance auction with  $n$  bidders, and suppose bidder  $i$  has type  $t_i \in [0, 1]$ . Fix other bidders' strategies, let  $G(x)$  denote the distribution of the first-order statistic of those bidders' bids, and let  $P(x)$  denote the expected payment that bidder  $i$  would make, conditional on winning the auction, if it submitted bid  $x$  (note that  $G(x)$  and  $P(x)$  are purely functions of the other bidders' strategies and  $x$ ). Bidder  $i$  has two decisions to make: popularity  $q_i$  and bid  $b_i$ . Its payoff as a function of these two decisions is given by

$$\Pi(q_i, b_i) = G(b_i) \times (q_i(t_i - q_i) - P(b_i)).$$

It is immediate that bidder  $i$ 's optimal choice of popularity is to set

$$q_i = \frac{t_i}{2}. \tag{1}$$

This is an optimal strategy *regardless* of what other bidders' strategies are (or how many of those bidders there are). Thus, the strategy profile in which each bidder sets  $q_i = t_i/2$  and then bids  $(t_i/2)^2$  per appearance constitutes an equilibrium.

### 3.2 Per Install Auction

Equilibrium characterization in the case of the per install auction requires a more involved argument. Consider a symmetric equilibrium of the per install auction with  $n$  bidders, and suppose equilibrium strategies are given by functions  $q(t)$  and  $b(t)$ , with the first one denoting the popularity chosen by a bidder with type  $t$  and the second one denoting its bid. We know that in equilibrium, function  $b(t)$  will be truthful (given the choice of popularity  $q(t)$  and the corresponding revenue-per-user  $t - q(t)$ ); however, just as in the case of the per appearance

auction, it is more convenient to not yet impose that restriction on function  $b(t)$ .

Take a bidder of type  $t_i \in (0, 1)$  and a real number  $\Delta_q$  such that  $q(t_i) + \Delta_q \in (0, t_i)$ . Let  $\Pi(\Delta_q; t_i)$  denote the expected payoff of bidder  $i$  whose type is  $t_i$  if it chooses popularity  $q(t_i) + \Delta_q$  but bids  $b(t_i)$ , given that other bidders are bidding according to strategies  $q(t)$  and  $b(t)$ . We then have

$$\Pi(\Delta_q; t_i) = F^{n-1}(t_i) \times (q(t_i) + \Delta_q) \times \left( t_i - (q(t_i) + \Delta_q) - E \left[ b(\max_{j \neq i} \{t_j\}) \mid \max_{j \neq i} \{t_j\} \leq t_i \right] \right).$$

Because we started with an equilibrium profile of strategies, the partial derivative of  $\Pi(\Delta_q; t_i)$  with respect to  $\Delta_q$  has to be equal to zero when evaluated at  $(0; t_i)$ . This implies the following equation for  $q(t_i)$ :

$$q(t_i) = \frac{t_i - E [b(\max_{j \neq i} \{t_j\}) \mid \max_{j \neq i} \{t_j\} \leq t_i]}{2}. \quad (2)$$

Note that even without fully characterizing the equilibrium, from the comparison of equations (1) and (2) it is immediate that equilibrium popularity chosen by each type  $t_i > 0$  will be strictly lower under the per install auction than under the per appearance auction (assuming, of course, that the equilibrium of the per install auction actually exists, which we will show below).

Recall that by incentive compatibility, we have  $b(t_j) = t_j - q(t_j)$ . We can then rewrite the expectation in equation (2) as

$$\begin{aligned} E \left[ b(\max_{j \neq i} \{t_j\}) \mid \max_{j \neq i} \{t_j\} \leq t_i \right] &= \frac{\int_0^{t_i} (s - q(s)) dF^{n-1}(s)}{F^{n-1}(t_i)} \\ &= \frac{(n-1) \int_0^{t_i} (s - q(s)) f(s) F^{n-2}(s) ds}{F^{n-1}(t_i)}, \end{aligned}$$

and subsequently rewrite equation (2) as

$$2q(t_i)F^{n-1}(t_i) = t_i F^{n-1}(t_i) - (n-1) \int_0^{t_i} (s - q(s)) f(s) F^{n-2}(s) ds. \quad (3)$$

The next step is to take a derivative of both sides of equation (3) with respect to  $t_i$ , which gives us

$$\begin{aligned} 2q'(t_i)F^{n-1}(t_i) + 2(n-1)q(t_i)f(t_i)F^{n-2}(t_i) &= F^{n-1}(t_i) + (n-1)t_i f(t_i)F^{n-2}(t_i) \\ &- (n-1)t_i f(t_i)F^{n-2}(t_i) + (n-1)q(t_i)f(t_i)F^{n-2}(t_i), \end{aligned}$$

which simplifies to

$$2q'(t_i) + (n-1)q(t_i)\frac{f(t_i)}{F(t_i)} = 1. \quad (4)$$

Equation (4) is a first-order linear differential equation, with the initial condition  $q(0) = 0$ .<sup>21</sup> In our case,  $F(t_i) = t_i$  and  $f(t_i) = 1$ , and so the equation becomes

$$2q'(t_i) + (n-1)q(t_i)\frac{1}{t_i} = 1,$$

with the solution

$$q(t_i) = \frac{t_i}{n+1}.$$

### 3.3 Comparison

The comparison between the two formats is immediate. Even with just two bidders,  $n = 2$ , a bidder of each type  $t_i$  chooses a much lower popularity under the per install auction than under the per appearance auction:  $\frac{t_i}{3}$  vs.  $\frac{t_i}{2}$ . Of course, this lower popularity on a per type basis immediately translates into a correspondingly lower overall probability that a product alternative to the dominant platform's one will be picked by users from the choice screen.

With more bidders, the difference becomes even more dramatic. Under the per ap-

---

<sup>21</sup>Equation (4) takes a particularly simple form when distribution  $F$  is uniform, but also has a tractable solution for the general case. The solution for the general case is  $q(t_i) = \frac{\int_0^{t_i} F(s)^{\frac{n-1}{2}} ds}{2F(t_i)^{\frac{n-1}{2}}}$ .

pearance auction format, a bidder’s choice of the point on the popularity–RPU frontier is unaffected by the number of bidders, and thus as  $n \rightarrow \infty$ , the popularity of the winning bidder converges to  $\frac{1}{2}$ . By contrast, under the per install format, the more bidders the auction has, the lower is the popularity that each of them chooses in equilibrium, and so as  $n \rightarrow \infty$ , the popularity of the winner converges to zero; therefore, the share of installs that goes to the dominant platform’s own product converges to 100%, completely undoing choice screen auctions’ *raison d’être*.

## 4 Evidence from Android Choice Screen Auctions

I now turn to the empirical evidence on the outcomes of Google’s choice screen auctions for default search engines on the Android platform. These auctions were conducted in January 2020 (for the period from March to June), June 2020 (for the period from July to September), and September 2020 (for the period from October to December). For each time period, 31 independent auctions were conducted (one per country). These auctions were conducted on a per install basis, with those submitting top three bids being shown on the choice screen and paying the fourth-highest bid every time a user chose one of them from the choice screen. In the event of a tie, more than three bidders could win, with the ties broken randomly on a per device basis.

Google lists the latest auction winners at <https://www.android.com/choicescreen-winners/>, and the lists of winners from the earlier auctions are available on the corresponding webpage on the Internet Archive.<sup>22</sup> These results, on a country-by-country basis, are summarized in Table 1. In the table, countries are sorted by population (from largest to smallest), while search engines are sorted by the average population they won across the three time periods. E.g., the search engine DuckDuckGo won a slot in every country in the first period (total population 519.4 million) and also in the second period (same total pop-

---

<sup>22</sup>[https://web.archive.org/web/\\*/https://www.android.com/choicescreen-winners/](https://web.archive.org/web/*/https://www.android.com/choicescreen-winners/).

ulation), but only four countries in period 3 (Bulgaria, Croatia, Iceland, and Liechtenstein, with the total population 11.4 million). The average population won by DuckDuckGo across the three time periods is thus  $(519.4 + 519.4 + 11.4)/3 = 350.1$  million, as listed in the last row of Table 1. Finally, in each search engine–country cell I list the periods in which that search engine won a slot on the choice screen menu in that country.

Table 2 lists the search engines by the average population they won across the three periods and adds data collected from the Android Play Store (<https://play.google.com/store/apps>) on the popularity and quality of these search engines.<sup>23</sup> To be eligible to participate in a choice screen auction, a “search provider must have an app that is available for free in Google Play” and if a search engine is chosen by a user from the choice screen, “[that app] will be downloaded from Play” in addition to the search engine being set as the default in the Chrome browser on the user’s device (<https://www.android.com/choicescreen/>). Of course, users can install these apps even without the choice screen (as they do, e.g., outside of Europe); moreover, the numbers listed on Play Store count the number of installs worldwide, not just in Europe. Thus, while the numbers of downloads resulting from choice screen auctions are not publicly disclosed by Google or the European Commission, the install numbers from Play Store listed in Table 2 provide upper bounds on those numbers.<sup>24</sup> These install numbers, of course, also provide a measure of the overall popularity of these search engines by including the installs that were made independently of choice screen auctions.<sup>25</sup>

---

<sup>23</sup>I collected the data on September 30, 2020, the last day of the second choice screen auction period. The screenshots of Play Store pages from which these data were taken are available at <https://web.stanford.edu/~ost/papers/screenshots.html>.

<sup>24</sup>Note that Play Store does not disclose the exact number of installs but instead shows a range, which is what Table 2 reports.

<sup>25</sup>One caveat on this measure is that the search engines’ popularity may vary by geography. For example, the majority of users of the Yandex search engine are from Russia and countries of the former Soviet Union.

Table 1: Winners of Android Choice Screen Auctions (by country)

Country	Population	info.com	DuckDuckGo	PrivacyWall	Bing	GMX	Qwant	Yandex	Seznam	Givero	Ecosia
Germany	83,990,646	1, 2, 3	1, 2	2, 3	3	1					
United Kingdom	67,999,326	1, 2, 3	1, 2	2, 3	1, 3						
France	65,297,182	1, 2, 3	1, 2	2, 3	3		1				
Italy	60,457,546	1, 2, 3	1, 2	2, 3	3		1				
Spain	46,789,532	1, 2, 3	1, 2	2, 3	3		1				
Poland	37,847,219	1, 2, 3	1, 2	3		2, 3		1			
Romania	19,196,044	1, 2, 3	1, 2	1, 3		2, 3		1, 3			
Netherlands	17,142,323	1, 2, 3	1, 2	2, 3	3	1					
Belgium	11,608,284	1, 2, 3	1, 2	2, 3	3		1				
Czech Republic	10,717,516	1, 2, 3	1, 2	3					1, 2, 3		
Greece	10,415,204	1, 2, 3	1, 2	1, 3		2, 3	1	1, 3			
Portugal	10,190,296	1, 2, 3	1, 2	1		2, 3	1	1, 3			
Sweden	10,114,623	1, 2, 3	1, 2	1, 2, 3	3						
Hungary	9,657,366	1, 2, 3	1, 2	1, 3		2, 3		1, 3			
Austria	9,032,162	1, 2, 3	1, 2	2, 3	3	1					
Bulgaria	6,938,828	1, 2, 3	1, 2, 3	1, 3		2, 3		1, 3			
Denmark	5,795,666	1, 2, 3	1, 2	1, 2, 3	3		1	1		1	
Finland	5,543,674	1, 2, 3	1, 2	2, 3	3			1			
Slovakia	5,461,816	1, 2, 3	1, 2			3			1, 2, 3		
Norway	5,428,345	1, 2, 3	1, 2	1, 2, 3	3						
Ireland	4,960,177	1, 2, 3	1, 2	1, 2, 3	3						
Croatia	4,099,199	1, 2, 3	1, 2, 3	1		2, 3		1			
Lithuania	2,710,479	1, 2, 3	1, 2	3		2, 3		1			
Slovenia	2,079,635	1, 2, 3	1, 2	1		2, 3		1			3
Latvia	1,881,006	1, 2, 3	1, 2	3		2		1, 3			
Estonia	1,328,929	1, 2, 3	1, 2			2, 3		1, 3			
Republic of Cyprus	1,190,962	1, 2, 3	1, 2	1		2, 3		1, 3			
Luxembourg	629,798	1, 2, 3	1, 2			3	1, 2, 3				
Malta	514,564	1, 2, 3	1, 2	1, 3		2, 3		1			
Iceland	341,834	1, 2, 3	1, 2, 3	1		2, 3		1			
Liechtenstein	38,150	1, 2, 3	1, 2, 3			2, 3	1				
Average pop. (M)		519.4	350.1	326.4	154.1	110.4	70.8	60.2	16.2	1.9	0.7



Table 2: Popularity and Ratings of Android Search Engine Apps

Search Engine	Av. Pop.	# Installs	Rating
info.com	519.4	10,000 – 49,999	n/a
DuckDuckGo	350.1	10,000,000 – 49,999,999	4.7
PrivacyWall	326.4	10,000 – 49,999	3.9
Bing	154.1	10,000,000 – 49,999,999	4.5
GMX	110.4	5,000 – 9,999	n/a
Qwant	70.8	1,000,000 – 4,999,999	3.9
Yandex	60.2	100,000,000 – 499,999,999	4.5
Seznam	16.2	1,000,000 – 4,999,999	4.1
Givero	1.9	100 – 499	n/a
Ecosia	0.7	5,000,000 – 9,999,999	4.6

Table 2 also includes the ratings from Android users on the quality of these apps. Play Store requires a minimum number of installs, ratings, and reviews before it starts disclosing information about average ratings to the users. Three of the ten winners of choice screen auctions did not pass this bar and, thus, do not have average ratings reported by the Play Store platform (indicated as “n/a” in the table).

Consistent with the theoretical results from Section 2, there is no meaningful correlation between the quality and popularity of the search engines participating in these auctions and the average population they won in them. Strikingly, of the top five winners, each of whom on average won a slot in choice auctions covering a population of more than 100 million, three had fewer than 50,000 installs (from all sources, over their lifetimes) and two, including the search engine that won the most coverage in the auction, had so few user ratings that Google did not provide their averages.<sup>26</sup>

Regarding the theoretical results of Section 3 on endogenous quality choice, I do not have direct evidence on the impact of the incentives from the auction on the actual design choices that search engines make to trade off revenue they make per each user vs. their popularity and quality. The time period of less than a year may also be insufficient for these

<sup>26</sup>info.com had been rated a total of 18 times and GMX had been rated 9 times. By comparison, DuckDuckGo had been rated 637,387 times.

design changes to manifest themselves. However, these incentives are clearly understood (and lamented) by at least some of the participants in these auctions.

The most highly rated search engine, DuckDuckGo, won a slot in every country in periods 1 and 2, but then by period 3 only won slots in four countries covering in total only 2% of the available population. As explained by DuckDuckGo, “Despite DuckDuckGo being robustly profitable since 2014, we have been priced out of this auction because we choose to not maximize our profits by exploiting our users. In practical terms, this means our commitment to privacy and a cleaner search experience translates into less money per search. This means we must bid less relative to other, profit-maximizing companies.”<sup>27</sup>

The second most highly rated search engine is Ecosia, which uses its profits to plant trees around the world (<https://info.ecosia.org/>). Despite its overall popularity with users (more than 5,000,000 installs), it only won coverage in the last period and only one country (covering less than 0.4% of overall available population). Ecosia explained its decision not to participate in the initial auction (for the first time period) as follows: “Ecosia is a not-for-profit search engine. Taking part in Google’s auction would force us to spend our income on an unnecessary bidding war with other (profit-oriented) search engines. We’d rather use it to plant trees on our endangered planet.”<sup>28</sup>

## 5 Conclusion

It may be tempting to use the evidence like that in Section 4 to argue that choice screen auctions should be scrapped and replaced with an alternative remedy. My theoretical results, however, show that such a conclusion may be premature. The issues described in Section 4 arise not from the usage of auctions per se, but rather from the specific implementation of these auctions. Replacing the “per install” bidding rule in choice screen auctions

---

<sup>27</sup><https://spreadprivacy.com/search-preference-menu-duckduckgo-elimination/>.

<sup>28</sup><https://blog.ecosia.org/google-auction-choice-screen/>.

with a “per appearance” one may be sufficient to alleviate the shortcomings of the current implementation, or at least meaningfully reduce their impact.

A “per appearance” auction can be implemented in practice in a number of different ways. Search engines can bid directly per appearance, specifying how much they are willing to pay every time they are shown on the choice screen, and paying the highest losing bid every time they are shown. To help them make bidding decisions, the platform could provide to each search engine historical data on its “conversion probability,” i.e., the likelihood that the search engine will be chosen by a user conditional on being shown on the choice screen. Alternatively, the auction could still ask bidders to report their values “per install,” but then rank bidders by the product of those reported values and estimated conversion probabilities and charge each winning bidder the lowest bid they could have reported and still won the auction. This approach is widely used in sponsored search auctions and is well understood. The platform can estimate these conversion probabilities by allocating a small fraction of “choice screen” impressions to random selections of all eligible search engines, and then using the data from this fraction of traffic to estimate the probabilities.<sup>29</sup>

While per appearance auctions may provide a simple, transparent, and potentially effective solution, it is important to note that this solution is not necessarily optimal. To judge the optimality of this (or any other) solution, one would need, at a minimum, to explicitly specify the regulator’s objective function. Moreover, even holding the overall auction format fixed, there are parameters of its implementation that will have an impact on its overall effectiveness and thus need to be chosen appropriately. E.g., one would need to decide how many options to show on the choice screen, how often to show the choice screen to the users (just once when the phone is purchased? with every major update of the operating system? at

---

<sup>29</sup>Google has a number of requirements for search engines to be eligible to participate in the auction, and any search engine that passes these requirements is deemed to be of sufficient quality to be offered as a choice to the users. E.g., in the official rules, Google says, “In the event that fewer than three eligible search providers bid, Google will fill any remaining slots randomly from the pool of eligible search providers on a per device basis. The pool of eligible providers will include those that applied to participate in the choice screen but did not submit bids.” ([https://www.android.com/choicescreen/.](https://www.android.com/choicescreen/))

some regular intervals?), and how often to conduct these auctions (a higher frequency would give more opportunities to the bidders to adjust their bids). I leave the analysis of these questions to future research.

Choice screen auctions can be a powerful tool for leveling the playing field in the now widespread settings in which a dominant platform offers a product that is competing with several others. More generally, the tools of market design can be useful for constructing elegant and effective regulatory solutions for the increasingly complex and interconnected digital economy. When deploying such solutions, it is important to analyze the equilibrium properties of the resulting systems on a detailed level. Seemingly minor details can have major effects on the outcomes.

## References

- Arozamena, L. and E. Cantillon (2004). Investment incentives in procurement auctions. *Review of Economic Studies* 71(1), 1–18.
- Bergemann, D. and J. Välimäki (2002). Information acquisition and efficient mechanism design. *Econometrica* 70(3), 1007–1033.
- Clarke, E. H. (1971). Multipart pricing of public goods. *Public Choice* 11(1), 17–33.
- Crémer, J., Y.-A. de Montjoye, and H. Schweitzer (2019). Competition policy for the digital era. *Report for the European Commission*.
- Economides, N. and J. Lianos (2011). A critical appraisal of remedies in the EU Microsoft cases. *Columbia Business Law Review* 2010(2), 346–420.
- Edelman, B., M. Ostrovsky, and M. Schwarz (2007). Internet advertising and the generalized second-price auction: Selling billions of dollars worth of keywords. *American Economic Review* 97(1), 242–259.

- Groves, T. (1973). Incentives in teams. *Econometrica* 41(4), 617–631.
- Hatfield, J. W., F. Kojima, and S. D. Kominers (2014). Investment incentives in labor market matching. *American Economic Review Papers & Proceedings* 104(5), 436–41.
- Hatfield, J. W., F. Kojima, and S. D. Kominers (2018). Strategy-proofness, investment efficiency, and marginal returns: An equivalence. *Becker Friedman Institute for Research in Economics Working Paper*.
- Lahaie, S. and D. M. Pennock (2007). Revenue analysis of a family of ranking rules for keyword auctions. In *Proceedings of the 8th ACM conference on Electronic commerce*, pp. 50–56.
- Rogerson, W. P. (1992). Contractual solutions to the hold-up problem. *Review of Economic Studies* 59(4), 777–793.
- Scott Morton, F., P. Bouvier, A. Ezrachi, B. Jullien, R. Katz, G. Kimmelman, A. D. Melamed, and J. Morgenstern (2019). Committee for the study of digital platforms: Market structure and antitrust subcommittee report. *Stigler Center for the Study of the Economy and the State, University of Chicago Booth School of Business*.
- Varian, H. R. (2007). Position auctions. *International Journal of Industrial Organization* 25(6), 1163–1178.
- Vickrey, W. (1961). Counterspeculation, auctions, and competitive sealed tenders. *Journal of Finance* 16(1), 8–37.



**Duck Duck Go, Inc.**  
20 Paoli Pike • Paoli, PA 19301  
267.690.7758 • duckduckgo.com

**Megan Gray**

General Counsel & Vice President, Policy  
Washington, DC  
megan@duckduckgo.com  
202.468.8869

February 19, 2020

onlineplatforms@cma.gov.uk

Re: Online Platforms Market Study  
Competition and Markets Authority

### **DuckDuckGo's Comments on the Market Study Interim Report Online Platforms and Digital Advertising**

DuckDuckGo is a privacy technology company that helps consumers stay more private online. DuckDuckGo has been competing in the U.K. search market for over a decade, and it is currently the 4th largest search engine in this market. From the vantage point of a company vigorously trying to compete, DuckDuckGo can hopefully provide useful input on this report's components addressing the search engine market. Because DuckDuckGo syndicates its ad feed from an upstream provider, and because DuckDuckGo does not operate a social network, we do not comment on those aspects.

The interim report is extraordinarily good. We are amazed at what the CMA has been able to uncover and evaluate in a mere six months. Many groups and governments have considered and opined on Google's dominance in the search market, but this report is the first we have seen that has truly captured, in a concrete manner, its foundational elements. The CMA is on the right course and we strongly desire that it stay on that course. In terms of prioritization, we believe the evidence is already over-whelming that Google has a deeply entrenched position and data-invasive behaviors in search, and it is well past the time for governments to construct remedies. As research has shown many times, "[c]onsumers expect to see government, regulators and consumer bodies working on their behalf to hold organisations collecting their data to account, and to make the first move in 'breaking the stalemate'."<sup>1</sup> It is of paramount importance that the CMA make a market reference, and move beyond studying to actually investigating.

For that reason, we were sorely disappointed that the report indicates an inclination to do what so many institutions have previously done. According to the report, "The decision on whether to propose a market investigation reference .... rests on whether it is the most appropriate mechanism for delivering potential reforms." There is no superhero that will solve the Google problem. There are only diligent foot soldiers who get their hands dirty and get the work done. The CMA has shown that it is quite capable of doing so. The question is a matter of grit. The CMA states that it views "recommendations to government as the best mechanism for delivering reforms." Exactly how many reports, how many commissions, how many blue-ribbon experts are necessary before anything actually changes? We've already seen the GDPR, the Furman Review, the Cairncross Review, the House of Lords Select

---

<sup>1</sup> <https://britainthinks.com/pdfs/Consumer-Data-Research-report.pdf>

Committee on Communications, three Google antitrust cases from the European Commission, the Stigler Center report, the special advisors' report for the European Commission, and the list goes on ad nauseam. How many letters, regulatory complaints, bankruptcies, and press releases must non-Google companies and civil society pursue, for how many years, before any governmental entity with statutorily authorized powers makes a concerted and considered effort to shoo the elephant back to the zoo? The government to which CMA intends to pass the buck has already passed the baton to the CMA. This should not be a game of hot potato. The time to act is now, and the body to act is you.

The report asserts three reasons for passing the buck, which can be summarized as follows:

1. Some people in the newly elected political party currently in power say encouraging words sometimes about some things that we interpret to mean that this government will maybe take indeterminate action of some kind to fix the Google problem.<sup>2</sup>
2. Google is a big company with tentacles reaching all around the world. We are just a little island.<sup>3</sup> We should be realistic about whether we can accomplish anything meaningful on a big problem.
3. The Google problem is hard, and we haven't figured out everything we need to understand by the statutorily set six-month deadline for publishing this interim report.

We need not say more on that.

Turning to the substance of the ~1,000-page report, and its treasure trove of evidence-filled appendices, the CMA correctly makes the preliminary determination that the search market has significant network effects in developing a web index and economies of scale in click-and-query data, which limits the ability of other search engines to compete with Google. The CMA correctly identifies that default settings in both desktop and mobile devices are powerful barriers to robust competition, and that there is a feedback loop between Google's position as the largest search engine and its ability to acquire extensive default positions that entrench and reinforce this dominance. The interim report finds "that the profitability of ... Google ... has been well above any reasonable estimate of what we would expect in a competitive market for many years. In 2018 we estimated that the cost of capital for .... Google [Search]... was around 9%, compared to actual returns on capital of over 40% ... This evidence is consistent with the exploitation of market power." The CMA also correctly observes that harm can take the form of exclusionary behavior, with Google having the incentive and ability to leverage its search market power into other related services. We heartily agree that this has the effect of making it more difficult for us, and other search engines, to compete.

---

<sup>2</sup> Notably, the report did not cite to anybody's actual statements.

<sup>3</sup> But see Interim Report, Paragraph 3.81. Just in the UK and only for 2018, Google paid \$1.3 billion dollars (16% of Google's total annual UK search revenues) to be the default search engine solely on mobile devices.



The CMA speculates, and we vigorously concur, that consumers face negative impacts from a lack of search competition, including reduced innovation, poor returns, excessive extraction of data, and lower quality of service. We also agree that an ex ante regulatory regime would be a helpful complement to ex post antitrust enforcement, especially given the lackluster and slow pace of that enforcement to date. We whole-heartedly agree that a variety of behavioral biases, such as those enumerated in Appendix G, exacerbate the epidemic of online surveillance, which large companies and other actors have been quick to take advantage of. We concur with the CMA’s summary of the academic research pointing to the fact that different nudge approaches should be used as complements rather than substitutes, and that there is no single “silver bullet” that will address all barriers, subconscious or otherwise, that consumers face in making privacy choices.

We are grateful that the CMA recognizes the importance of the shadow surveillance, and how fundamentally naive consumers are about it. Appendix G, Paragraph 77: “There is less awareness of information that consumers do not actively volunteer, such as an IP address. Harris Interactive also found that only 47% of respondents knew that device identifiers can be collected. Doteveryone found that only 38% of respondents thought data about their internet connection was collected and only 17% believed that information others share about them was collected.”<sup>4</sup> Appendix G, Paragraph 97: “Which? similarly found that most respondents had some awareness of data sharing but there was a common misconception that data sharing is ‘bounded.’ The idea that data can be combined, aggregated and shared was described as ‘an important penny-drop’ moment for consumers. Respondents were also unaware of the extent to which data sharing occurs and that an entire industry of data brokers focused on sharing and selling consumer data existed.” DuckDuckGo believes that, while additional consumer education is helpful, it is more important to actually help consumers by changing platform practices, which are intentionally designed to ensure consumers do not have their own, and the collective public’s, privacy as a top-of-mind concern, especially given the inherent cognitive limitations and consumers’ behavioral biases.

We find that platforms regularly engage in “sludge” techniques, creating deliberate frictions to make it harder for consumers to effectuate their intended choices. For example, Google has historically displayed alarming pop-up boxes to consumers who have changed their default search engine in Chrome to DuckDuckGo. These pop-ups imply that those consumers are at risk of some kind of malware because of their choice to use DuckDuckGo, nudging those consumers to revert to Google as their default search engine. Similarly, Google has failed to give consumers an ever-green mechanism to

---

<sup>4</sup> See also Appendix G, Paragraph 90: “Digital Content Next (2018) found that two-thirds of the information collected or inferred by Google through an Android phone and the Chrome browser was done through ‘passive’ methods, that is where an application is set up to gather information while it is running, possibly without the user’s knowledge. The report defined Google’s passive data gathering methods in terms of data from platforms (e.g., Android and Chrome); applications (e.g., Search, YouTube, Maps); publisher tools (e.g., Google Analytics, AdSense); and advertiser tools (e.g., AdMob, AdWords).”





change the Android home screen search bar to DuckDuckGo. Even after Google's upcoming preference menu for new Android devices is introduced in March, the devices will have no setting by which a consumer can switch the home screen search bar to a non-Google search engine (assuming the consumer did not do so upon activation of the device).

We emphatically support the CMA's intention to further study:

- Ad auction manipulations, including how Google employs levers with auctions to directly and indirectly influence pricing. We have certainly seen Google introduce false scarcity to raise auction prices in the Android preference menu.
- Arbitrage in the search and ad industries.
- Lack of transparency in the reporting of ad fraud. While it is known that advertisers and publishers do not receive sufficient information from large search engines, it is worth noting that downstream syndicators are also deprived of this insight.
- Browser privacy settings, including how these controls interact with the controls offered by the platforms. The CMA states it will explore whether blocking cookies at the browser level negates the cookie notice presented to consumers when they search. We add that the CMA should also examine whether browser settings impact search engine defaults, especially once the EU Android search preference menu is introduced.
- Privacy controls available at the OS-level and their interaction with other controls, such as within the browser, to examine whether blocking ad personalization in Android prevents other platforms such as Bing from serving personalized ads. We add that the CMA should also examine whether Android's upcoming Manifest version prevents or hinders privacy functionalities from properly working.

### **Opting Out of Personalized Advertising**

We strongly support the CMA's interest in requiring platforms to allow consumers to turn off personalized advertising. A ban on personalized advertising vis-a-vis search engines is particularly ripe. As noted in Appendix E, Paragraph 131(a), "consumer-specific data appears less valuable in search advertising .... Google said that many search queries are not affected by personalization signals, even if historic data is available." In other words, neither Google Search nor consumers would experience any downside to requiring Google to turn off personalized advertising.

Any such ban should extend to advertisers' aggregation techniques for creating targeted advertising on search engines, as further described in that paragraph: "... indicated that while search advertising is driven by intent (the keyword), it normally needs to be augmented with audience targeting. WPP said that it can leverage native targeting signals such as demographic and location data, and their client's own first-party data (e.g., visits to key pages on their website), to target specific audience groups. This is supported by some Google research showing that the use of remarketing lists for search ads audience has on average a [redacted]% higher click-through-rate and a [redacted]% higher completed-view-rate when compared to non-audience targeting."

The contemplated opt-out, however, needs to be clearly described. We are concerned that the CMA appears to believe that consumers can already opt out of personalized advertising (other than by using DuckDuckGo). For example, the CMA characterizes Google as giving consumers “full control” over their search history. This is at odds with other parts of the CMA report, where the CMA recognizes that opting out of *seeing* personalized advertising does not mean that Google has stopped profiling consumers, collecting massive amounts of personal data for use in other ways, such as creating look-alike audiences or filter bubbles. See Measuring the "Filter Bubble": How Google is influencing what you click, <https://spreadprivacy.com/google-filter-bubble-study/> (December 2018). Similarly, consumers’ ability to delete their search history is often moot, because the value that Google obtains from that search history is quickly achieved, and the deletion occurs only after Google has sucked all relevant data points from it, including its diffuse incorporation into user profiling.

We are also concerned with the CMA’s conflation of contextual and personalized data. In Appendix D, the CMA categorizes four broad categories of data relevant to its study: (a) user data; (b) contextual data; (c) campaign data; and (d) search data. We paused at the CMA’s discussion of contextual data because it does not align with current policy discussions. For example, we regularly explain our business model as relying on contextual ads (i.e., ads triggered by search key words), in contrast to Google’s model of personalized/targeted ads built on data collected on individuals, specifically including their search history. Yet, the CMA describes contextual data in a manner that blurs this distinction. Appendix D, Paragraphs 15-17: “Contextual data refers to data on the context in which an advertisement impression is served or a consumer is making a query. For instance, it can relate to the content of a webpage on which the impression is shown, the natural meaning of the keywords the consumer inputs in a query, or information about external factors such as weather conditions. It can also refer to the context of a consumer search such as the consumer’s location and their search history (particularly their immediate prior searches)... [S]ome contextual data can be personal data, if it is associated with an identifiable person. For instance, search queries and histories and location data recorded against specific users’ profiles may be considered personal data within the meaning of relevant data protection legislation. Contextual data, alongside user data, can be used to personalize results and advertisements to the consumer.” We do not agree with this characterization of contextual data.

Later in Appendix D (Paragraph 86), the CMA states, “Contextual advertising typically uses relatively limited user data such as search terms, device, location, and language, in order to show ads in the right size, format, and language.” We do agree that technical aspects like this are used to display ads (of any kind), but we would not characterize this as contextual. We certainly do not agree with the CMA’s next sentence in this paragraph that the line between contextual and personalized advertising is blurred by advertisers who target audiences (e.g., demographics, affinity, in-market, similar audiences, etc.) that is personalized advertising (aka targeted ads), as shown by the CMA’s footnote citation to Google’s advertising model.<sup>5</sup>

---

<sup>5</sup> <https://support.google.com/google-ads/answer/1704368?hl=en-GB>

## Choice Architecture

We support the concept that platforms should be required to trial and test the choice architecture they adopt. It's our understanding that that large platforms do in fact test this, through third party consultants, and actually implement the opposite, i.e., design their "choices" in a manner that dissuades consumers from selecting the option that protects their privacy. For example, Google's choice of the nomenclature for its purported "incognito" mode regularly misleads consumers into believing their searches are private, when in fact they are captured by Google just as much as the regular mode. See *Tracking in 'Incognito' or Private Browsing Mode?*, <https://spreadprivacy.com/tracking-in-incognito/> (Feb. 2017). As discussed below, while we conceptually support a requirement for testing choice architecture, we believe that requiring Google to do so will only marginally improve online privacy, due to the innumerable ways that companies can engage in sludge techniques.

## Improper Reliance on Comscore Data to Determine Market Share

Comscore has not produced a general search report since 2016.<sup>6</sup> The CMA cobbled together Comscore data through other Comscore reports, which are grossly deficient because they encompass non-general search measurements such as Yahoo answers. One need only look at Figure C4 in Appendix C, in which Comscore reports a mere 70% market share for Google Search, when every other measurement method (e.g., clicks, referrals) indicate at least a 90% market share (a non-trivial 20% delta).

Comscore's data on search engine market share is irredeemably flawed, just as much, if not more so, in the UK as in the US. The fact that Comscore is widely used within the examined industries and by other government bodies does not mean it *should* be used. We note for example that in the CMA's report, a chart compiled from Comscore data purports to measure data on malware-posing-as-search-engine companies; similarly, the report mentions a search engine with de minimis traffic originating from typosquatting (goole.com). Comscore does not measure, for example, searches conducted through DuckDuckGo's apps and extensions at all. Because of DuckDuckGo's stance against online tracking, our apps and extensions block both Comscore and Statcounter measurement tags. In rebuttal, Comscore points to its panel data as a proxy. But that data is also intrinsically flawed because people who value privacy would not agree to participate in such a panel. In other words, Comscore's data suffers from immense selection bias.

In a sense, however, our Comscore criticism may be irrelevant. Just as one does not need a precise ruler to measure floodwater depth in a decade-long torrential rain, Google's 90%+ domination of the search engine market is easily established. Nonetheless, because it will be important to calibrate remedial efforts, to determine if they change market share at all or how well, the CMA would be wise to invest more effort into this issue.

---

<sup>6</sup> Comscore's last general search engine report:

<https://www.comscore.com/Insights/Rankings/comScore-Releases-February-2016-US-Desktop-Search-Engine-Rankings>



Specifically, we strongly recommend that the CMA rely on “publisher data.” Publisher here means the owner of a website that logs visits. No one needs to opt in except for the publisher. With enough publishers with significant traffic, the traffic logs will accurately determine search market share. To elaborate, every website knows the immediately prior website – for example, if I search on Bing.com for “UK CMA” and click on Bing’s resulting link for your website, I am whisked to your website, and your website knows that I arrived there from Bing.com.

The largest set of publisher data is readily available to the CMA – Google Analytics, which is embedded on approximately 79% of the top 50,000 sites. While Google does not publicly report Google Analytics data, that data can be obtained by the CMA (or any of the antitrust investigations occurring in so many parts of the world). Tellingly, Google recently updated its list of default search engine options in Chrome in the U.S. based on “on new usage statistics” from “recently collected data,” which we presume to be Google Analytics data. Still, even Google Analytics will not precisely reflect search engine market share. DuckDuckGo’s apps and extensions, for example, block the Google Analytics request outright.

But the publisher data need not be massive to be statistically significant. The CMA could obtain informative publisher data from publishers themselves, including the CMA itself. If the CMA determines that its own site does not have sufficient traffic, or that the traffic is skewed in some way, the CMA could aggregate its own publisher data with other government websites. The CMA could also obtain publisher data from other groups, such as from a range of UK news sites.

## Overview of Contemplated Interventions

- **Code of Conduct.** We do not have experience with enforceable codes of conduct for companies with strategic market status, and we are therefore reluctant to take a strong position on whether such a code would be helpful to diversify the search market. That said, we are doubtful that any such code could be developed and enforced in a timely manner, and time is the very essence of an effective remedy in the search market. We are also concerned with the contemplated code of conduct’s reliance on the undefined term, “strategic market status.” We are reminded of the U.S. Supreme Court’s multi-decade struggle to define obscenity and Justice Potter Stewart’s famous quote that he could not use words to describe it, but that he “knew it when he saw it.” Nonetheless, we are inclined to agree that such a code system would more quickly address competition problems than standard antitrust enforcement, at least as that has been practiced the past few decades. But that is not saying much.
- **Pro-Consumer Rules.** We support rules to give consumers greater control over data and to improve transparency. But giving consumers more settings to exercise “choice” is unlikely to be sufficient for meaningful change. The world is already familiar with the long-failed “notice and consent” regimes. As the Competition Law Forum notes, platforms often purport to give consumers a plethora of granular privacy settings, but these give consumers a false sense of

control because those settings usually only govern visible (front stage) data processing. A much preferable approach is a rule that requires all platforms to give consumers an option to use their services without requiring in return the use of consumers' data. We believe this should be a generally applicable rule, not adjusted according to whether a platform has SMS status. Similarly, while we are supportive of changes to default settings such that a consumer must affirmatively opt-in to personalized advertising, we believe this should be a generally applicable rule, not adjusted according to whether a platform has SMS status. We are also supportive of rules that require platforms to design consent and privacy policies in a way that facilitates informed consumer choice. See *Ethical, by Design: How We Design With Your Privacy in Mind*, <https://spreadprivacy.com/ethical-by-design/> (January 2019). That said, the number of ways in which these choices can be manipulated are legion and ever-evolving, always one step ahead of the antibiotic du jour (or de jure). Design rules to facilitate consumer choice cannot avoid the need for constant vigilance in this “whack a mole” process.

- **Market Interventions.** We support interventions to address specific sources of market power and to promote competition. CMA's categorization of these interventions as demand-side remedies (facilitating consumer choice and improving access to consumers for non-Google search engines) and supply-side remedies (providing third-party access to Google index and ranking data) is constructive. As between structural or behavioral market remedies, we believe the latter is more likely to be impactful (the latter are designed to regulate or constrain the behavior of market parties and/or empower customers to make meaningful choices). We do not understand the report's claim that “all of the interventions .... would need some form of regulatory body to implement them.” While we are not opposed to the creation of a Digital Markets Unit, as recommended by the Furman Review, that is still just a glimmer on the horizon, and may never occur. The CMA can, and has in the past, implement remedies itself. For example, in the CMA's retail banking market investigation, the CMA marched into the future with bold structural changes that quickly and immensely helped consumers and small businesses, without any need to punt elsewhere to revolutionize the banking landscape. Similarly, the CMA could issue orders (following a market investigation) regarding access to Google's web index, Google's purchase of major default search engine placements, etc.

### Demand Side

**Default Settings.** The power of defaults cannot be overstated, as shown by the CMA's determination that, just in the UK and only for 2018, Google paid third parties \$1.3 billion dollars (16% of Google's total annual UK search revenues) to be the default search engine solely on mobile devices.<sup>7</sup> We adamantly agree that Google should be forced to relinquish its defaults on mobile operating systems, devices (laptops, tablets), and most browsers. The CMA report does not specifically mention Google's Chrome browser or Google's Pixel phone for this

---

<sup>7</sup> Interim Report, Paragraph 3.81.



intervention (or for the preference menu intervention), but they should be included. At a minimum, Google's domination in the mobile environment (Android), and the desktop/laptop environment (Chrome) should be kept top-of-mind when contemplating the various ways this intervention could be implemented. For example, regardless of whether the intervention is designed as a flat ban on search engines, device manufacturers, or browsers, the restriction should not disregard Google's current or anticipated ability to dilute the effect of that ban (e.g., below-market pricing on Pixel phones).<sup>8</sup> We recommend excluding the Firefox browser and other small browsers (e.g., Opera) from the contemplated ban because we support a diverse browser market.

We believe the best way to address default purchases is by mandating preference menus (more on that below), which effectively eliminates the default while concurrently providing the consumer with options. However, Google should also be required to simultaneously update the Chrome browser and Android operating system such that consumers can easily change defaults themselves by a simple click (i.e., get back to the preference menu setting). Right now, when consumers visit DuckDuckGo.com or download our app, we have no simple, programmatic way to help them change their default search engine across their Android device (e.g., both the home search bar and in Chrome). Instead, these are multi-step, non-intuitive changes, with the home search bar change not even possible without very advanced technology skills. We should be able to prompt the consumer (e.g., "do you want to change your default search engine to DuckDuckGo? click here") to jump directly to the preference menu such that, if the consumer selects DuckDuckGo, all those defaults would change at once with one tap.

In addition, Google should be required to create in AndroidOS a universal home screen search bar that can be configured in Settings. Today, Android's home screen search bar is an app-based functionality tied to Google Search that cannot be changed in Settings. Following the EU-mandated preference menu, consumers can, on new-device activation, change that to a non-Google search engine -- but if the consumer later deletes the non-Google search app, the home screen search bar automatically reverts to Google Search and the consumer cannot easily reverse that without doing a complete factory re-set of the device.

**Preference Menus.** As explained above, while we believe a prohibition on Google setting or buying defaults is better than the status quo, an even better solution is government-mandated preference menus. See "Search Preference Menu Immediately Increases Google Competitors' Market Share by 300-800%," <https://spreadprivacy.com/search-engine-preference->

---

<sup>8</sup> Exhibit J, Paragraph 10 floats the idea that a default ban could be designed as a limit on the proportion of default positions secured by Google for particular devices or browsers. We think this will be difficult to implement as a practical matter due to measurement challenges, market fluctuations, and trade issues (e.g., Huawei sanctions) but that the CMA should explore it nonetheless because it is important to maintain browser market diversity.

menu/ (October 2019), and “Search Preference Menus: Improving Choice With Design,” <https://spreadprivacy.com/search-preference-menu-design/> (January 2020).

We note the CMA report did not fully capture our position on this subject. Exhibit J, Paragraph 12 states that we support a preference menu when consumers set up their device or browser – this is correct,<sup>9</sup> but we also believe that preference menu should be pushed out on applicable devices and browsers now, not just over time as consumers purchase new phones or computers. Google did this (albeit poorly) with Android devices in Spring 2019. To wit, Google displayed an alert box within Google Search on Android that notified consumers that they could select a different search engine and directed consumers to Settings (as shown in news articles).<sup>10</sup> While Google has apparently claimed that it is impossible to display a comprehensive preference menu on existing devices (i.e., one that would change the search bar default), we find this hard to believe given the common practice of pushing out important Android software updates for other reasons. Even if technological barriers prevent a change to the home screen search bar on existing devices, those barriers certainly do not prevent Google from displaying an alert box on existing devices to change the Chrome search default. Of course, we have opinions on how that alert can be designed to be effective and not more visual clutter that nudges consumers to dismiss without due regard.

We have acknowledged that a large number of consumers will select Google as their default search engine in any preference menu or alert box. But that does not counsel against having such functionality, just as one should not let “perfect be the enemy of good.” Increasing non-Google search engine market share by some amount is enormously preferable to the status quo. We agree with the CMA’s observation that this measure has the potential to become more impactful over time because non-Google search engines would be able to incrementally gain access to more search queries and clicks (which permits them to improve search result relevance) and increase the likelihood of investments in other search improvements.

As we have witnessed with the Android preference menu, active and granular government direction on the specific design and mechanics of that preference menu is necessary to prevent Google from gaming the preference menu in its favor. If the CMA is not inclined to be so granular, even a directive with basic requirements could likely solve much of the gamesmanship. With Android, we would expect Google to create a preference menu that funnels consumers to “choose” Google. The CMA could create basic guidelines (“do’s and don’ts), incorporating lessons from the three past iterations of the Android preference menu, as well as the earlier Microsoft browser and Russian search preference menus. Thereafter, the CMA could

---

<sup>9</sup> Excluding some browsers, as noted above.

<sup>10</sup> These news articles show the Spring 2019 preference menu: <https://venturebeat.com/2019/04/18/google-to-suggest-10-browser-and-search-engine-alternatives-for-android-users-in-europe/> and <https://9to5google.com/2019/04/18/google-europe-browser-search-choice/>



transfer future monitoring and enforcement to a body such as the contemplated Digital Markets Unit.

Regarding the instances and frequencies for any such preference menu, we believe it should be shown (a) for new devices, one time at activation; and (b) for existing devices and applicable browsers, one time, on any date announced a month in advance. Our opinion as to the instances and frequencies for the contemplated preference menu has an important caveat additional frequency is not needed, provided Google has given consumers (a) an AndroidOS setting that allows consumers to change the home screen search bar after they make their preference menu selection; and (b) the persistent ability to accept a one-tap prompt to programmatically change the Chrome default and the home screen search bar default.

We strenuously oppose pay-to-play auction formats for preference menus. We have been very clear on this subject since the EU Android remedy was first announced, and we will be publishing a longer blog on this subject at [SpreadPrivacy.com](https://spreadprivacy.com) in the coming weeks.

## Supply Side

**Third-Party Access to Click-and-Query Data.** We agree that Google should be required to provide click-and-query data to rival search engines. However, as the CMA correctly notes, the vast majority of search engines rely on syndication contracts with upstream providers, which often have exclusivity provisions that would prevent them from using Google's click-and-query data as a result, this remedy is insufficient alone.

Regarding Google's "concern" that third parties accessing click-and-query data "would create risks to consumers' privacy .... and lead to .... inappropriate parties ... gaming Google's algorithm," we consider this a convenient excuse. It is our mission to set a new standard of trust online, and we would not support this intervention if it resulted in reduced privacy. The click-and-query data does not need to have (and should not have) consumers' personal information in any material way. It may be that Google is making the straw-man argument that individuals search their own name, which certainly does occur, but we do not believe those searches in the contemplated API of billions nay, googles of searches would materially impair privacy. The CMA's report indicates that trackers and IP addresses would not be part of the data set, which solves for the most critical privacy issue, which is ensuring a search cannot be traced back to a person. Even in the rare event that a person searches a phone number or a home address, or even his passport number or his UK national insurance number, that can be addressed without much trouble. Google can create a filter that excludes searches containing a certain number of digits, for example. As for the prospect that parties would be able to use the click-and-query data to game Google's algorithm, we speculate that Google is envisioning a situation where someone would spend tens of millions of dollars (which is what it would likely entail to ingest an API of all of Google's click-and-query data) to then spend millions of dollars more to reverse-engineer that data in some way to parse out Google's ranking signals, and then use that information to re-





design a website such that a bogus weight-loss clinic would be the first organic result. Obviously this is an absurd hypothetical. And if it were to occur, we are confident that Google would be quick to terminate access rights and remediate the issue. In addition, we anticipate that this market intervention would be only for companies that either currently operate a general search engine or establish a bona fide basis for launching a new general search engine, and that in either case, the third party would be contractually or regulatorily required to solely use Google's click-and-query data for that purpose.

While Google apparently did not surface this issue with the CMA, a genuine privacy issue that should be avoided in access to click-and-query data is "sessions." A search session is a record of a consumer's searches linked together over time or by device by a single identifier, often an IP address. It is not difficult for Google to provide access to click-and-query data without session information, and it certainly is not needed to create or augment a third-party's index and ranking data.

We do not put any weight on the idea that third-party access to click-and-query data would reduce Google's incentive to innovate or improve its algorithm. As previously stated, even with all of the contemplated market interventions, we anticipate most consumers will still use Google Search for the foreseeable future. Introducing Google to a competitive landscape will actually heighten Google's incentive to innovate.

Regarding the specific data that would be shared (query data alone; click and query data; or click and query data and search results), we believe providing access to any of these categories would be a vast improvement in diversifying the search engine market. However, the last group (click and query data and access to search results) is most likely to materially reduce Google's dominance of the search market. As stated above, however, session data should never be transferred or shared. We are not conceptually opposed to requiring third parties to pay for access, provided that it is on FRAND terms. However, because a determination of FRAND terms is likely to be fraught with lengthy negotiations and litigation, and given Google's almost total domination of the search market, huge incumbency advantage, and mind-blowing revenue, we take the pragmatic approach that no payment should be required.

**Syndication Agreements.** We agree that Google should be obligated to supply syndicated search results and its ad feed on FRAND terms. We emphasize that syndication of the search results is pointless without the ad feed, so inclusion of an ad feed would be a necessary component of this intervention. We expect this will significantly diversify the search market. Regarding pricing, because this would be a bundled supply (algo + ads), we suggest that the algo component be priced near the upstream provider's actual cost, with the ad component on a revenue-sharing basis, with a larger portion of the revenue going to the downstream syndicator as it achieves higher revenue bands.

The CMA observes that “if Google were required to offer syndication on more attractive terms to third parties, this could potentially limit the ability of Microsoft to compete with Google in providing these syndication services.” Yet, that seems a plausible outcome only if the CMA does nothing to address Google’s defaults or third-party access to Google’s click-and-query data. If the CMA does pursue a market intervention in this regard, it very well may be that Microsoft would readily become a more attractive syndication partner than Google.

In any event, the CMA also observes that Microsoft already has a rich array of downstream syndicators, and that Microsoft obtains substantial non-monetary value from these companies.<sup>11</sup> Moreover, Google has stated under oath that it does not syndicate to private search engines. Google requires any downstream search engine to provide Google with the most personal of search data – the consumer’s IP address. Google then uses that identifier to supplement its detailed consumer profiles, and track those consumers as they browse the Internet (and increasingly, as they move in the physical world too). See Google’s Submission in Response to House of Representatives Subcommittee Questions Following July 16, 2019 Hearing (Answer 25).<sup>12</sup> Thus, Microsoft and Google do not appear to compete against each other in the syndication market, at least on pricing terms. We believe the best course of action, at least now and for the near term, is likely to be regulation of syndication arrangements on non-price terms only.

### **Interaction of Proposed Interventions and Timing with Code of Conduct**

While it is theoretically possible that one of the contemplated interventions would be sufficient to substantially impact Google's dominance, we believe that is not realistic. We also do not consider these interventions to be substitutable. Different entities will likely benefit from different interventions. For example, it is possible that only Microsoft would be in a position (given its Azure cloud service and strong financial position) to ingest Google’s click-and-query data to improve its web index. It is possible that only mission-driven search engines like Ecosia and DuckDuckGo will benefit from a preference menu. We advocate in favor of all these remedies, as a package. A less satisfactory (but still substantial improvement over the status quo) remedy would be a gradual approach in the following order: (1) preference menu; (2) default purchases; (3) access to click-and-query data; and finally (4) syndication agreements.

Because the market interventions contemplated in the report are the most impactful tools available to the CMA, we strongly prefer that they be put into effect prior to, or alongside, the

---

<sup>11</sup> Footnote 94: “For example, Microsoft submitted that ‘a primary motivation for entering syndication deals is to help increase our scale [and relevancy of results] to improve competitiveness over time.’”

<sup>12</sup> <https://docs.house.gov/meetings/JU/JU05/20190716/109793/HHRG-116-JU05-20190716-SD030.pdf>

code of conduct. We definitely are not in favor of sequencing such that the code of conduct is implemented prior to these market interventions.

### Box 9.1: CMA's Key Questions

1. Do you agree with our descriptions of general search services and social media service, as set out in Chapters 2 and 3? *As to general search services, yes.<sup>13</sup> We do not opine on social media services.*
2. Do you agree with our explanation of the different forms of digital advertising, as set out in Chapter 5? *We do not opine on this subject.*
3. Do you agree with our explanation of how the intermediated open display market operates, as set out in appendix H? *We do not opine on this subject.*
4. Do you agree with our understanding of the role of data, as set out in Appendix E? *Yes.*
5. Do you agree with our analysis and findings in relation to competition in search and social media, as set out in Chapter 3? *As to general search services, yes. We do not opine on social media services.*
6. Do you agree with our analysis and findings in relation to consumer control over data, as set out in Chapter 4? *Yes.*
7. Do you agree with our analysis and findings in relation to competition in digital advertising, as set out in Chapter 5? *We do not opine on this subject.*
8. Do you agree with our assessment of the merits of a code of conduct for large online platforms funded by digital advertising? *Except as noted above, yes.*
9. Do you agree with the range of possible practices we have identified that could be considered under such a code of conduct? *Yes.*
10. Have we identified the appropriate range of potential interventions to address the sources of market power for Google and Facebook? *As to Google, yes, except we suggest the CMA also consider (a) programmatic changes to Android and Chrome such that consumers can change defaults with a single click after navigating to competing search engines; (b) immediate implementation of an alert box for search engine selection; and (c) within the AndroidOS, a post-activation setting to change the default for the home screen search bar. We do not opine on Facebook.*
11. Have we identified the appropriate range of remedies to improve consumers' control over their data? *Yes, except we suggest the CMA also consider (a) programmatic changes to Android and Chrome such that consumers can change defaults with a single click after navigating to competing search engines; (b) immediate implementation of an alert box for search engine selection; and (c) within the AndroidOS, a post-activation setting to change the default for the home screen search bar.*

---

<sup>13</sup> One nit Footnote 16 in Appendix F states that donations are a funding component of privacy-focused search engines. We do not believe that is correct. It certainly is not true for DuckDuckGo. In fact, we donate substantial money to third parties. See 2019 DuckDuckGo Privacy Donations: \$600,000 for Privacy Advocacy, <https://spreadprivacy.com/2019-duckduckgo-privacy-donations/> (August 2019).



DuckDuckGo.

12. Have we identified the appropriate range of remedies to address conflicts of interest and a lack of transparency in digital advertising markets? *We do not opine on this subject.*
13. We have set out a number of specific questions relating to the potential interventions, which are discussed in the following appendices, do you have any views on the more specific questions in these documents? *We have addressed above.*
14. Do you have any views about the appropriate sequencing of the remedies we have identified? *Yes, described above.*
15. Do you agree with our assessment of the potential candidates for a market investigation, and what are your views on the merits of each? *Yes, discussed above.*
16. Do you agree with our proposal not to make a market investigation reference at this stage? *Absolutely not.*
17. Do you support recommendations to government as an effective route to implementing interventions in these areas? *Absolutely not.*
18. Do you agree we have identified the right areas for further work in the second half of the study (set out below), and are there any significant gaps? *Yes. We have not identified any significant gaps, except for the consideration of Android OS settings, one-click programmatic changes to defaults, and an alert box.*

Sincerely,

