



# Agenda

1

Google Has Monopoly Power In The U.S. General Search Services Market

2

**Google's Search Distribution Contracts Have Anticompetitive Effects**

3

Google Failed To Prove Procompetitive Benefits Outweighing The Anticompetitive Effects

4

Summation

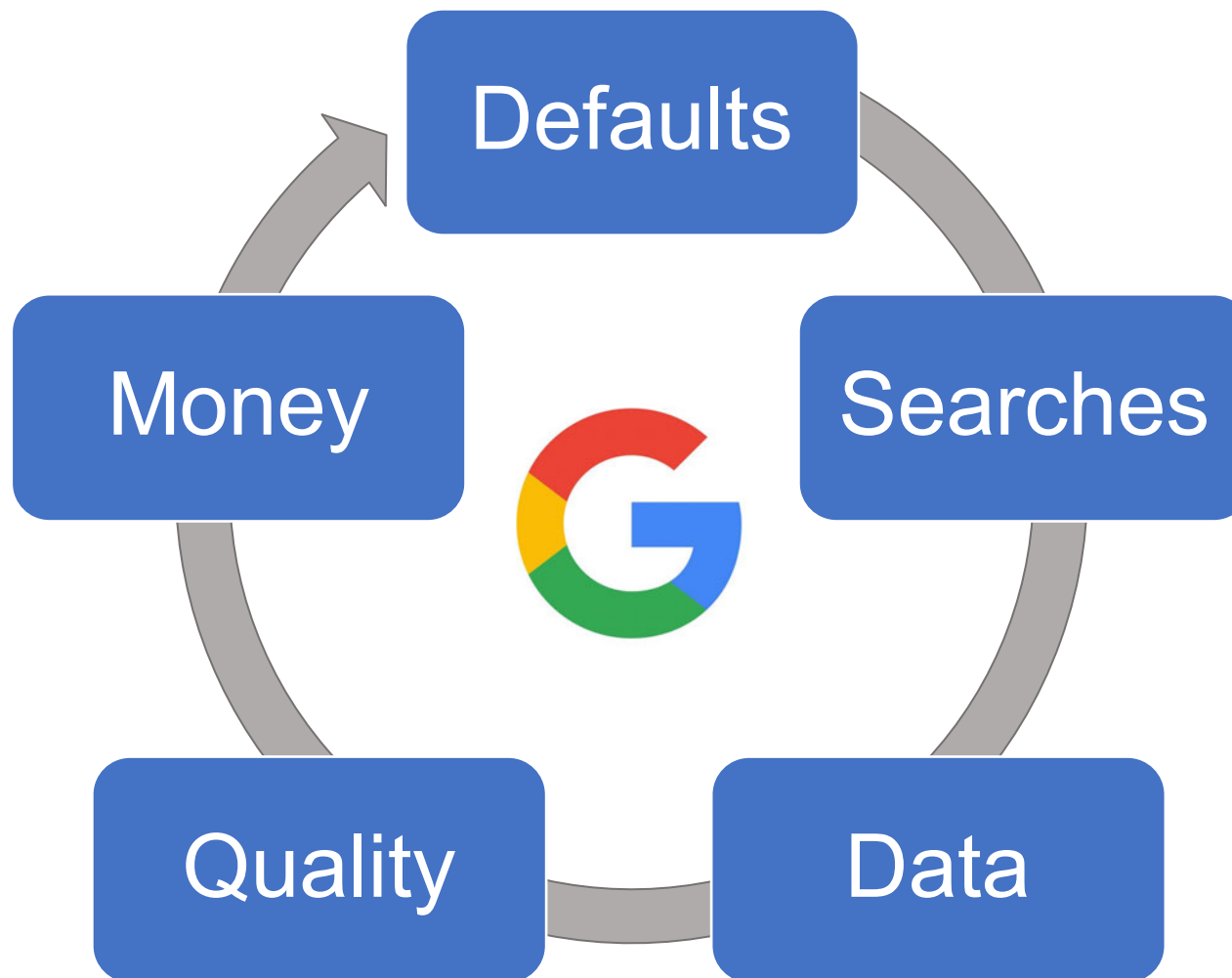
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# Exclusionary

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# Feedback Loop



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“In this case, after concluding that Microsoft had monopoly power, the District Court held that Microsoft had **violated § 2 by engaging in a variety of exclusionary acts . . . , to maintain its monopoly by preventing the effective distribution and use of products that might threaten that monopoly.**”

*United States v. Microsoft Corp.*, 253 F.3d 34, 58 (D.C. Cir. 2001) (emphasis added) (cleaned up)

2

## Google's Search Distribution Contracts Have Anticompetitive Effects

**A.** Google's Distribution Contracts Hoard Defaults

**B.** Anticompetitive Effects Of Google's Distribution Contracts

**C.** Even Under Exclusive Dealing, Google's Distribution Contracts Violate Section 2

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## A. Google's Distribution Contracts Hoard Defaults

1. Defaults Are The Most Efficient Means Of Distributing Search
2. Apple ISA
3. Android MADA & RSA
4. Third-Party Browsers

# Google Pays Billions For Defaults

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# Power Of Defaults



**Sridhar Ramaswamy**

*Former Neeva CEO & Founder; Former Google SVP, Ads & Commerce*

A. . . . [W]hen it comes to a number of things in our online lives, on the phone or on a computer, the defaults that these devices ship with are the ones that the vast majority of people are going to simply stick with, they're not going to change them. And so **being the default in that sense is enormously powerful because, you know, pious prose around "competition being a click away," notwithstanding in practice, they don't change.** . . . .

*Tr. Testimony*



**Mikhail Parakhin**

*CEO of Advertising & Web Services*

A. . . . It is, I believe well-documented fact that **people very rarely switch defaults.** . . . .

*Tr. Testimony*



**Gabriel Weinberg**

*CEO & Founder*

Q. Well, what have you found to be the most successful method of distributing DuckDuckGo's search engine?

A. **When we've been the default for brief periods in different times, that's been the best method.** . . . .

Brave made us the default in some countries for a brief period of time. And so we had kind of a taste of what that looks like. I'd say that's the best way.

*Tr. Testimony*



**Satya Nadella**

*CEO*

A. . . . This entire notion that users have choice and they go from one website to one website or one search into one search and it's complete bogus. **There's defaults. The only thing that matter[s] in terms of changing search behavior.** . . . .

*Tr. Testimony*

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# Power Of Defaults



**Prof. Kevin Murphy**

*Google Expert*

*Prof. of Economics, Univ. of Chicago*

**Q.** Having a default gives a search engine additional search volume, right?

**A.** The empirical evidence seems to say that's correct, yes.

*Tr. Testimony*



**Google's Responsive Proposed Findings of Fact ¶ 85**

The evidence at trial established that the search engine in the default position receives additional search volume beyond what it would otherwise receive. . . .

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# Power Of Defaults

G 2007

On Strategic Value of  
Default Home Page to Google

PMetrics Team

~AutoDate

1

Google

Ex. No.  
UPX0123  
1:20-cv-03010-APM

HIGHLY CONFIDENTIAL

GOOG-DOJ-05756467

“Default home page can be a **powerful strategic weapon** in the Search battle

- Could be an **easy way to grow and defend market share** for Google
- Could be the **Achilles heel** for Yahoo and MSN”

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# Mobile Defaults

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# Mobile Defaults: Profs. Whinston & Rangel



**Prof. Michael Whinston**

*Plaintiff Expert  
Prof. of Economics &  
Management, M.I.T.*

**A.** . . . . So [Google is] separately coming up with estimates for mobile and for desktop. And you can see right away the figure for iOS recovery is much lower than it is for desktop . . . . [D]efaults are more powerful on mobile devices. . . . [T]hey make the point . . . that mobile defaults have more prominence. So they're observing this as well . . . .

*Tr. Testimony*



**Prof. Antonio Rangel**

*Plaintiff Expert  
Prof. of Neuroscience,  
Behavioral Biology, and  
Economics, Caltech*

**A.** . . . . [T]he fundamental difference has to do with the nature of the device interfaces. Phones have very small screens. They allow to display a lot less information in the interfaces. And that bottom line leads to more choice friction.

*Tr. Testimony*

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# Mobile Defaults: Google



Presentation re: “iOS Search Strategic Analysis + iOS 12 Potential Search Impact”

“People are much less likely to change default search engine on mobile.”

*UPX0139 (2018)*



Presentation re: “NYC Scenarios”

“Defaults have more prominence in mobile due to screen size and UI.”

*UPX0142 (2016)*



Document re: “2016-2Q Earnings Diligence - TAC Appendix”

“User behavior is more heavily influenced by default settings on mobile and tablet.”

*UPX0084 (2016)*

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## A. Google's Distribution Contracts Hoard Defaults

1. Defaults Are The Most Efficient Means Of Distributing Search
2. Apple ISA
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**“And so that’s the net effect of the -- of the payments. They basically freeze the ecosystem in place effectively.”**

**- Sridhar Ramaswamy**

## A. Google's Distribution Contracts Hoard Defaults

1. Defaults Are The Most Efficient Means Of Distributing Search
2. Apple ISA
3. Android MADA & RSA
4. Third-Party Browsers





# Current Apple ISA: Key Terms

Apple G 2016

## AMENDMENT TO THE INFORMATION SERVICES AGREEMENT

This AMENDMENT TO THE INFORMATION SERVICES AGREEMENT (this "Agreement") is entered into effective as of September 30, 2016 ("Execution Date") by and among Apple Inc., Apple Distribution International ("ADI"), and Apple South Asia Pte. Ltd. ("ASA" and collectively with Apple Inc., ADI and their respective subsidiaries, "Apple"), on the one hand, and Google Inc., Google Ireland Limited ("GIL"), and Google Asia Pacific Pte. Ltd. ("GAP" and collectively with Google Inc., GIL and their respective subsidiaries, "Google"), on the other hand, amending that certain Information Services Agreement dated December 20, 2002 between Apple, Inc. and Google Inc. (as amended or otherwise modified prior to the Execution Date and as amended by this Agreement, the "ISA Agreement"). The provisions of this Agreement are effective as of the Execution Date, and the remaining provisions of the ISA Agreement remain unchanged and in full force and effect.

### 1. Use and Implementation of Google Services in Apple Software

#### (a) Safari (Web Browser Software)

Apple will pre-set and use the Services as the Default search service for Search Queries in Apple's web browser software (e.g., Safari or successor versions) designed for use on (i) one or more of the following Apple operating systems: iOS, watchOS, tvOS, macOS or any other operating system software made generally available by Apple during the Term, or (ii) the Microsoft Windows operating system (such web browser software, the "Web Browser Software"). During the Term, Apple's use of the Services as Default in the Web Browser Software will remain substantially similar to its use (including, without limitation, vis-a-vis other providers of internet services) as of the Execution Date of this Agreement (such use, the "Permissible Software Default Use").

Subject to the Permissible Software Default Use, Apple shall not be limited in its ability to alter, modify and innovate its Web Browser Software, and Google shall not be limited in its ability to control branding, presentation, and use of the Services.

"Default" means the Services will automatically be used for responding to Search Queries initiated from the Web Browser Software, unless the End User selects a different third-party search service.

"Search Query" means any textual, voice, image or other input entered by an End User in the Web Browser Software or Siri or Spotlight (or successor versions) that requests information; provided however, that subject to the Permissible Software Default Use, Apple may determine an End User's input is not a Search Query so long as Apple's determination is based exclusively on its intent to provide a superior user experience.

Confidential – Subject to Party NDA

Ex. No.

JX0033

1:20-cv-03010-APM

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GOOG-DOJ-02696793

- All queries in all versions of Safari default to Google
- Google shares 36% of net ad revenue with Apple
- No termination at will
- Term until 2026; renewal options through 2031
- "Apple and Google will cooperate to support and defend" the ISA
- Apple's use of Google in Safari must remain "substantially similar" to its use as of Sept. 2016
- Google holds right-of-first-refusal for advertising in Siri and Spotlight

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# Apple: Controlling Defaults

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# “Undisputed” Mistake

Case 1:20-cv-03010-APM Document 451 Filed 01/11/23 Page 1 of 55

[REDACTED]

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF COLUMBIA

United States of America, <i>et al.</i> ,	Plaintiffs,	Case No. 1:20-cv-03010-APM
v.		HON. AMIT P. MEHTA
Google LLC,	Defendant.	[REDACTED]

State of Colorado, <i>et al.</i> ,	Plaintiffs,	Case No. 1:20-cv-03715-APM
v.		HON. AMIT P. MEHTA
Google LLC,	Defendant.	[REDACTED]

**DEFENDANT'S MEMORANDUM OF POINTS AND AUTHORITIES  
IN SUPPORT OF ITS MOTION FOR SUMMARY JUDGMENT**

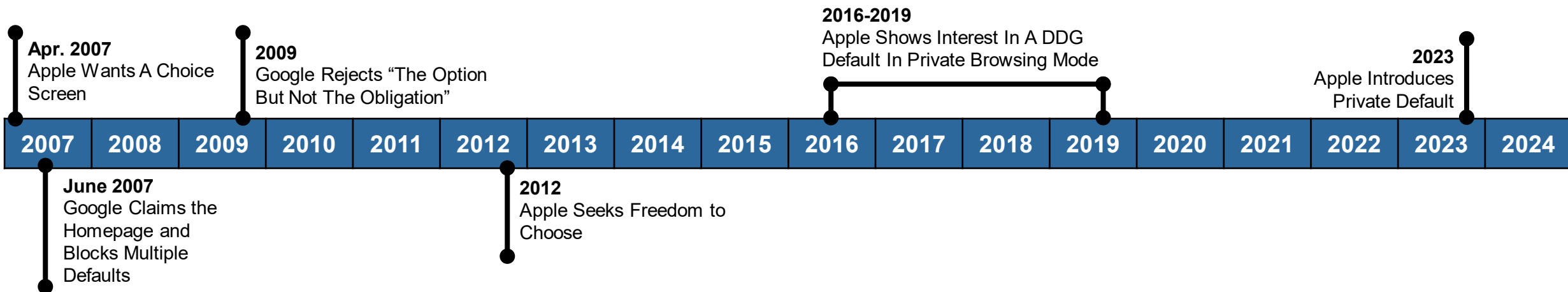
“[U]ndisputed facts show that a single pre-set default search service was not imposed by Google through the challenged agreements, but rather is a consequence of Apple, Mozilla, and other companies having chosen to design their browsers with a single search engine set as the default upon first use.”

Def.’s Mem. Supp. Mot. Summ. J. at 32 (emphasis omitted),  
ECF No. 451

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# The Apple ISA In Effect



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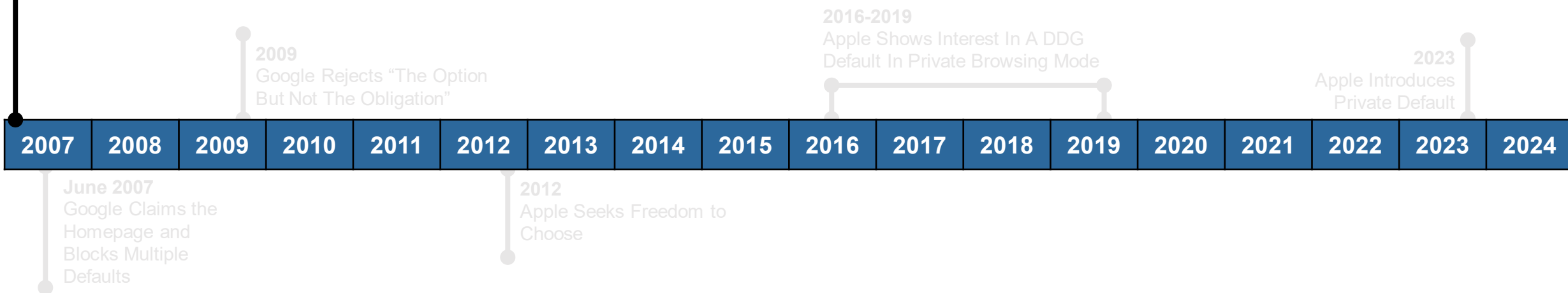


# Apple ISA: Apple Wants A Choice Screen

Apr. 2007   

## Apple Wants A Choice Screen

- Apple wanted **default-search choice screen for Safari for Windows.**
- Apple & Yahoo negotiated a draft agreement for Yahoo's participation.
- Apple proposed an ISA amendment for Google's participation.
- Sergey Brin to Steve Jobs: "**not interested in paying for nondefault.**"



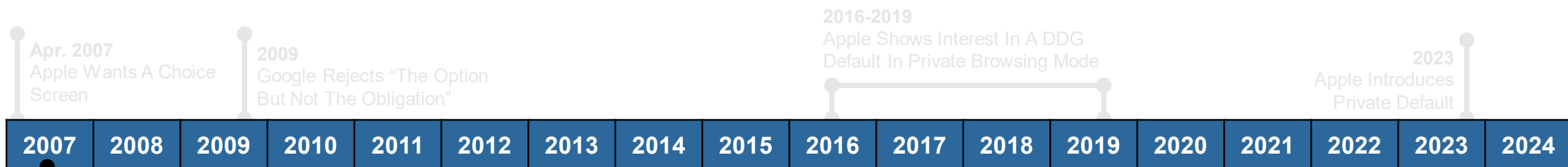
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**“no default, no rev share”**

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# Apple ISA: Google Claims The Homepage



## June 2007

### Google Claims The Homepage...

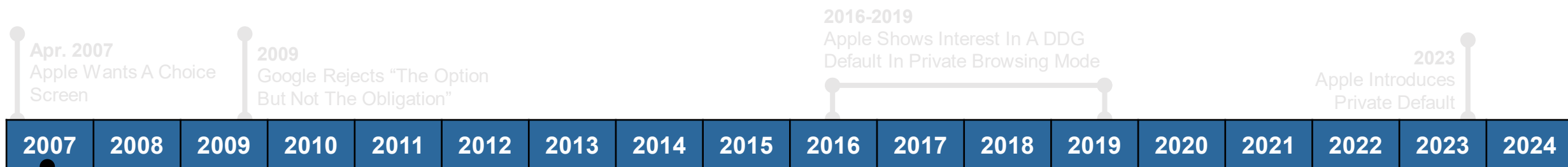
- iPhone demonstration showed **Yahoo as the Safari homepage.**
- Google realized "something [] wasn't covered" by the ISA.
- ISA amended to **prevent rivals from gaining Safari homepage default.**

... And Blocks Multiple Defaults

**REDACTED FOR PUBLIC FILING**



# Apple ISA: Google Claims The Homepage



## June 2007

Google Claims The Homepage...

### ... And Blocks Multiple Defaults

- Apple considered different versions of Safari, with defaults to browser distributor.
- Mr. Pichai warned that differing-default versions of Safari would give users a choice.
- Google **demanded the ISA block versions of Safari with different search defaults.**
- The 2007 ISA required Google to be preset as the default search engine in all versions of Safari.

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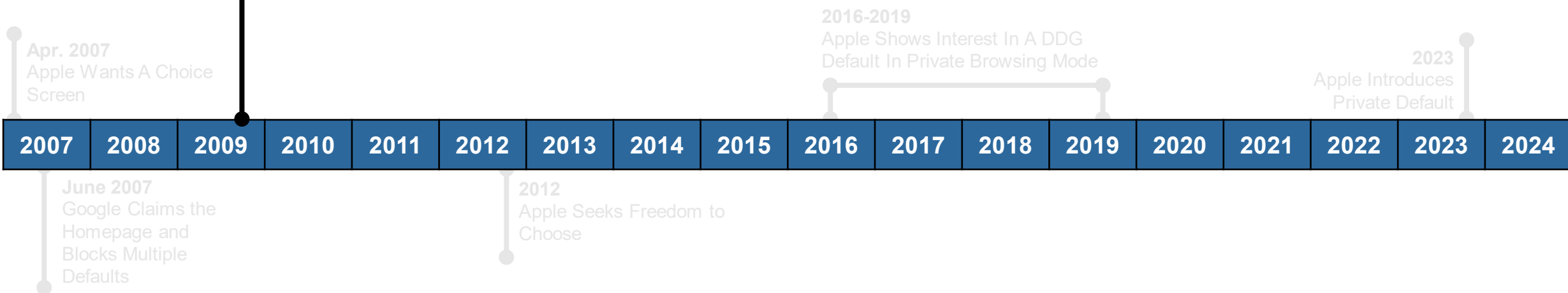


# Apple ISA: Google Rejects “Option But Not The Obligation”

2009  

## Google Rejects “The Option But Not The Obligation”

- Apple seeks “**the option but not the obligation**” to set Google as Safari’s default.
- This would let Apple set Google as default in “some units of [Safari] but not others (e.g., **only in some locations, product lines or versions**).” In other words, Apple could pick the solution it thought was best.



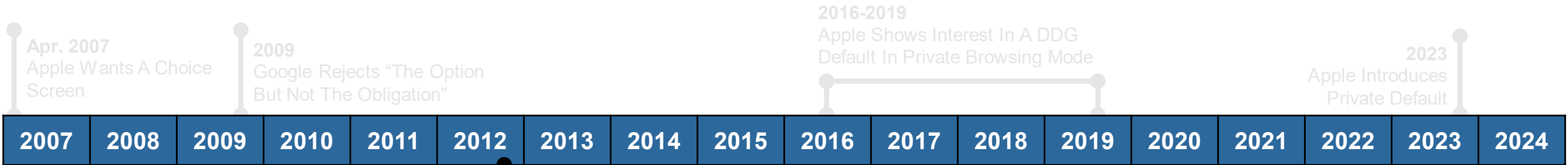
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**“Option but not the obligation”**

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# Apple ISA: Apple Seeks Freedom To Choose





Apr. 2007  
Apple Wants A Choice Screen

2009  
Google Rejects "The Option But Not The Obligation"

2016-2019  
Apple Shows Interest In A DDG Default In Private Browsing Mode

2023  
Apple Introduces Private Default

June 2007  
Google Claims the Homepage and Blocks Multiple Defaults

2012    
Apple Again Seeks Freedom To Choose



**Kevin Murphy, PhD**  
*Google Expert, Prof. of Economics, Univ. of Chicago*

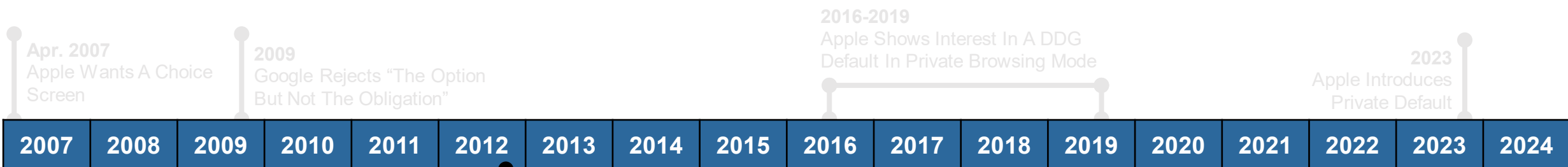
- Q. But the ability for Apple to choose, but not be obligated to put Google in the default spot, that was something that Apple was, again, seeking in 2012?
- A. Well, this is -- this is part of that negotiations, yeah. You can ask for things in negotiations.

*Tr. Testimony*


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# Apple ISA: Apple Seeks Freedom To Choose



June 2007  
Google Claims the Homepage and Blocks Multiple Defaults

2012    
Apple Again Seeks Freedom To Choose



**Joan Braddi**  
*VP, Product Partnerships*



Q. And that's what Apple asked for, no default obligation at all, right?  
A. Just like in their very first agreement.

\* \* \*

Q. But, ultimately, Apple's obligation to make Google the default in Safari, that remained in place, right?  
A. If they wanted to receive revenue share, yes, benefit of the bargain.

*Tr. Testimony*

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**“Option but not the obligation”**

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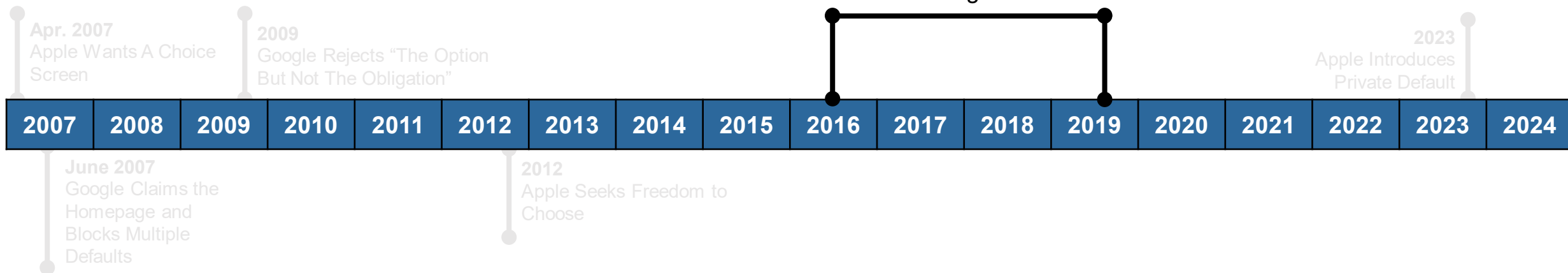


# Apple ISA: No DDG In Private Browsing Mode

2016-2019   

Apple Shows Interest In A DDG Default In Private Browsing Mode

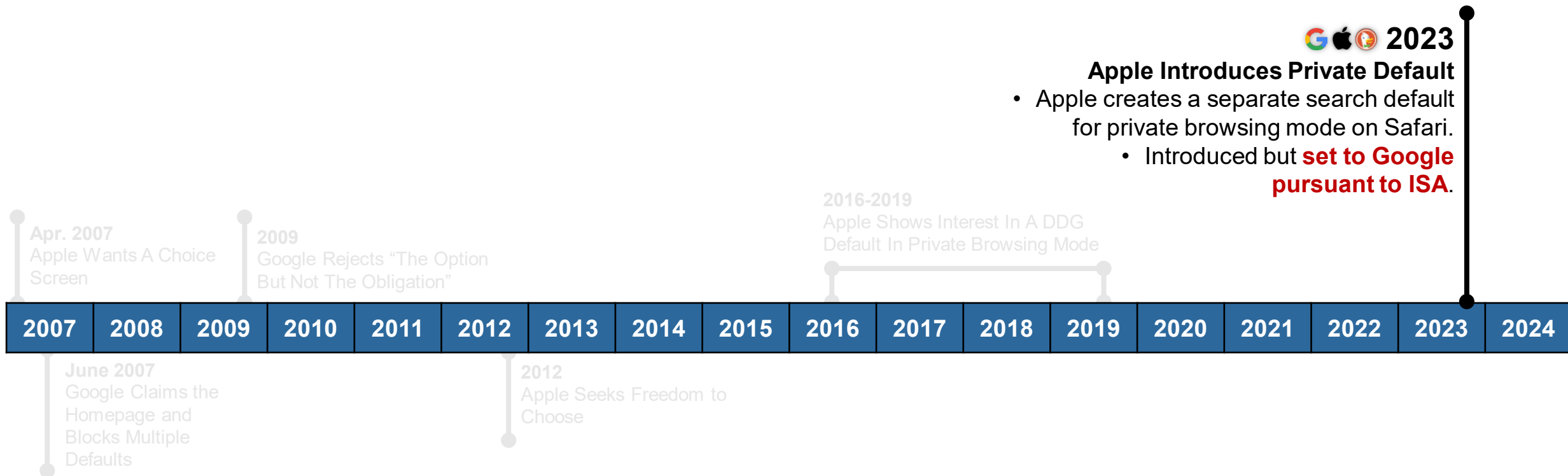
- Apple recognizes that **Google does not protect user privacy.**
- Apple executives expressed interest in DDG as private browsing default.



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# Apple ISA: No DDG In Private Browsing Mode



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# Google Restricted Apple's Product Design

-  Rejected choice screen on Safari for Windows (2007)
-  Rejected multiple versions of Safari with different defaults and claimed the Safari homepage (2007)
-  Rejected Apple's request for "the option but not the obligation" to set Google as default (2009, 2012)
-  Limited Apple's ability to route different queries to different places with Suggestions (2016)
-  Limited Apple's ability to partner with DuckDuckGo for private browsing mode (2016–2019, 2023)

**REDACTED FOR PUBLIC FILING**



# Default Exclusivity

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# Apple ISA Exclusivity



**Eduardo Cue**  
SVP, Services



**Q.** And does Apple plan to preload any third-party applications on its devices?

**A.** No. As I've said, from the very beginning, we haven't done it, and I don't see any scenario in which we would.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Apple ISA Coverage



**Prof. Michael Whinston**

*Plaintiff Expert*

*Prof. of Economics & Management, M.I.T.*

In 2020, the exclusive defaults secured by the ISA covered **28%** of all U.S. general search queries.

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## A. Google's Distribution Contracts Hoard Defaults

1. Defaults Are The Most Efficient Means Of Distributing Search
2. Apple ISA
3. Android MADA & RSA
4. Third-Party Browsers



# Android Contracts: Key Terms

## MADAs (OEMs)

- No Play Store without MADA
- Place the Google Search widget, Play Store, and a Google-app folder on the homescreen
- Preinstall 11 Google apps and make 6 undeletable, including Chrome & GSA
- Generally two-year terms

## RSAs (Carriers & OEMs)

- Device must be built under MADA
- All search defaults must be set to Google
- No alternative search services—as defined by Google—preinstalled or set as the default
- Google shares percentage of net search ad revenue or pays bounties
- Generally two- to four-year terms

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# MADA Compulsion



**Jeffrey Giard**

*VP, Strategic Partnerships & Business Development*

**Q.** Do you think Android phones distributed by T-Mobile would be commercially successful without **Google Play Store**?

**A.** . . . I don't think so. That would be **extremely difficult for a device to be successful without it**. There are alternative app stores, but they -- **none of them have been able to replace the Play Store**.

*Des. Testimony*



**Satya Nadella**

*CEO*

**A.** Google has carrots and it has massive sticks, like **one big stick is that we'll remove Google Play** if you sort of don't have us as the primary browser. And **without a Google Play, an Android phone is a brick**.

*Tr. Testimony*



**John Yoo**

*Former Finance Manager, Android Partnerships*

“Although I think there is **near-zero probability of Samsung not wanting the Play store** on their phone, I will say that there is value in the leverage that Play provides to get some of the non-critical GMS apps on a phone. What I mean by that, is that OEMs want the Play store on their phone, and in return we are able to get other apps like Google search and chrome . . . on the phone as a result.”

*UPX0312 (2019)*

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# MADA And RSA Coordination



**Prof. Kevin  
Murphy**

*Google Expert  
Prof. of Economics,  
Univ. of Chicago*

**Q.** Now, an OEM can't sign an RSA . . . unless they've already signed the MADA; right?

**A.** That's the way it works, yes.

**Q.** And OEMs would consider the add-on benefits of signing the RSAs when they consider the MADA?

**A.** The net benefits, not the gross benefits.

\* \* \*

**Q.** When Google sets the RSA percentage for carriers, it is taking into account the prior agreement and what they've already got in the MADA; right?

**A.** I would think so. That's what -- as an economist -- I can't speak for Google. As an economist, that's what I would expect them to do, yes.

*Tr. Testimony*

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# Exclusivity

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# Search Widget Significance



**Prof. Kevin Murphy**

*Google Expert, Prof. of Economics, Univ. of Chicago*

Q. Okay. And the **search widget is actually by itself overtaking the browsers** in your slide; right?

A. That's **correct**.

*Tr. Testimony*



Email From Anna Kartasheva re: “Carrier RSAs”

“MADA protects the **widget** on the devices (**60% of the revenue**).”

*UPX0150 (2020)*



**Prof. Kevin Murphy**

*Google Expert, Prof. of Economics, Univ. of Chicago*

“Share of Google Search Queries by Access Point on Android (U.S.)”

**Search Widget accounts for ~40% of Google search queries on Android** in the United States in 2021.

*DXD-37.109*



Email From John Yoo re: “\*Privileged\* Philipp’s feedback on GDAF framework ahead of BC”

“Without MADA, we would not be able to incentivize placement of the **Widget, which drives ~50% of search revenue** on a device and secures other 1P apps like Chrome and Assistant.”

*UPX0316 (2019)*

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# MADA De Facto Exclusivity

 Presentation re: “Android Agreements – Summary of Current MADA + RSA”

A second search widget is “[a]llowed but not likely.”

*UPX0141 (2018)*

 Presentation re: “MSFT on Android Scenarios”

“Additional **search widget** allowed but unlikely.”

*UPX0131 (2017)*

 **John Yoo**  
*Former Finance Manager, Android Partnerships*

A. [W]e thought that having two widgets was a little too much, so that **OEMs are not likely to put two widgets on a device.**

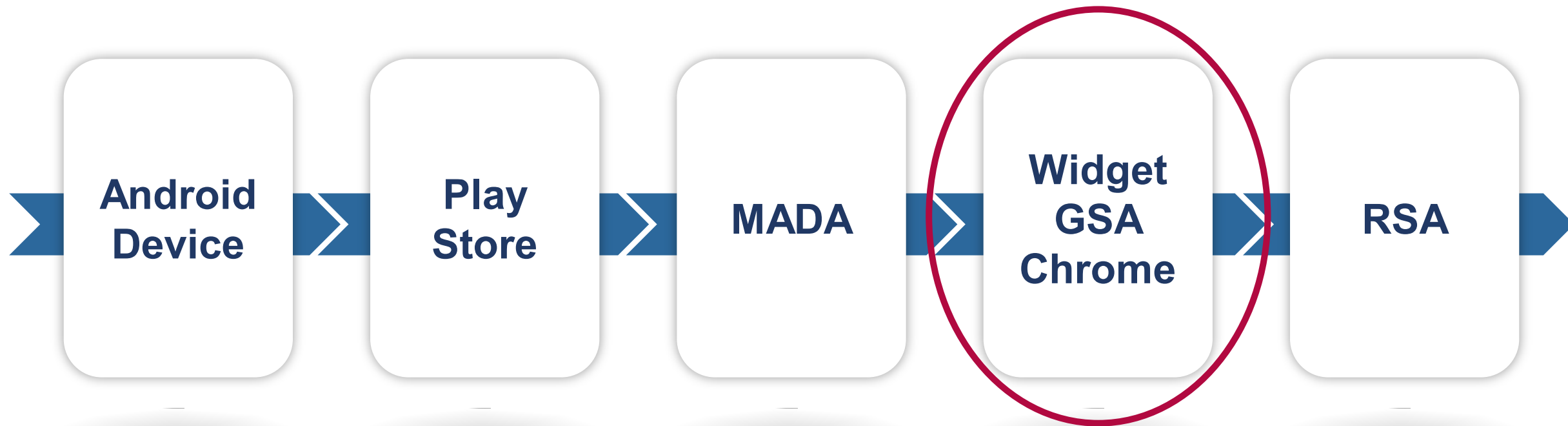
*Tr. Testimony*

**No Android smartphone sold in the United States has more than one search widget preinstalled on the default home screen**

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# MADA De Facto Exclusivity



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# Exclusivity's Value



**Sundar Pichai**  
CEO



**Q.** And Google pays for these **exclusive defaults** because they have value, right?

**A.** That's correct.

*Tr. Testimony*

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# RSA Exclusivity



**Prof. Kevin  
Murphy**

*Google Expert  
Prof. of Economics,  
Univ. of Chicago*

**Q.** What benefits do you believe Google gets from the exclusive defaults on -- in the RSA?

**A.** Well, in terms of what they get for the RSAs, I'm not sure I recall any exclusive defaults. **They have preinstallation exclusivity under most of the RSAs we've seen.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Android MADA And RSA Coverage



**Prof. Michael Whinston**

*Plaintiff Expert*

*Prof. of Economics & Management, M.I.T.*

In 2020, exclusive defaults secured by Android MADAs and RSAs covered **19.4%** of all U.S. general search queries.

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## A. Google's Distribution Contracts Hoard Defaults

1. Defaults Are The Most Efficient Means Of Distributing Search
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# Third-Party Browser RSA Coverage



**Prof. Michael Whinston**

*Plaintiff Expert*

*Prof. of Economics & Management, M.I.T.*

In 2020, exclusive defaults secured by third-party browsers covered **2.3%** of all U.S. general search queries.

**REDACTED FOR PUBLIC FILING**



2

## Google's Search Distribution Contracts Have Anticompetitive Effects

A. Google's Distribution Contracts Hoard Defaults

B. Anticompetitive Effects Of Google's Distribution Contracts

C. Even Under Exclusive Dealing, Google's Distribution Contracts Violate Section 2

## **B.** Anticompetitive Effects Of Google's Distribution Contracts

1. Prevent Rivals From Obtaining Scale
2. Reduce Incentives To Invest
3. Prevent Expansion Of Safari Suggestions
4. Payments Disincentivize Apple Entry
5. Right Of First Refusal Disincentivizes Apple Entry
6. Blunt Nascent Competition

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## **B.** Anticompetitive Effects Of Google's Distribution Contracts

1. Prevent Rivals From Obtaining Scale
2. Reduce Incentives To Invest
3. Prevent Expansion Of Safari Suggestions
4. Payments Disincentivize Apple Entry
5. Right Of First Refusal Disincentivizes Apple Entry
6. Blunt Nascent Competition

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# User-Side Data Scale



**Sridhar Ramaswamy**

*Former Neeva CEO & Founder; Former Google SVP,  
Google Ads & Commerce*

“[S]cale here refers to how much query **click information** is one able to collect.”

*Tr. Testimony*



Document re: “Search Quality Newsletters >  
2016 Q1 Ranking Newsletters”

“User interaction signals include clicks as well as **all other interactions from users with search results or search result pages**, which can be mined from session logs.”

*UPX0262 (2021)*



**John Giannandrea**

*Apple Chief, Machine Learning & AI Strategy;  
Former Google Head of Search & AI*

**Location** and time of day are useful search signals.

*Tr. Testimony*



**Mikhail Parakhin**

*CEO, Advertising & Web Services*

Microsoft tracks search traffic by **device type or form factor**.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Scale And Quality



**Sridhar**

**Ramaswamy**

*Former Neeva CEO &  
Founder; Former  
Google SVP, Google  
Ads & Commerce*



“And **one of the biggest signals** that all search engines have relied on for the past 20 years is this thing that you talk about, which is query click information.

\* \* \*

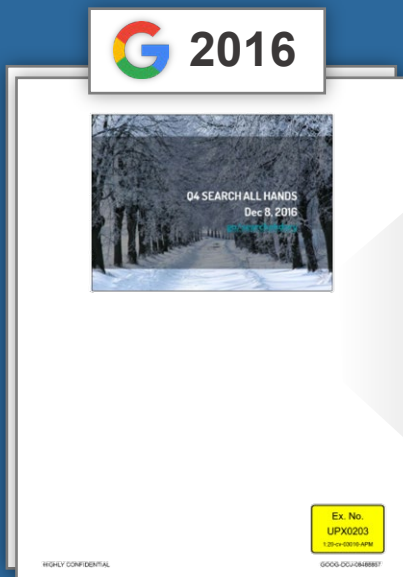
[T]he more users you have, the more queries you have seen over time, **the more click behavior you’ve observed over time, the more effective you can be in . . . creating a higher quality search engine.**”

*Tr. Testimony*

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# Scale And Quality



“If a document gets a positive reaction, we figure it is good. If the reaction is negative, it is probably bad. Grossly simplified, **this is the source of Google’s magic.**”

“**[I]f you search right now, you’ll benefit from the billions of past user reactions we’ve recorded. And your responses will benefit people who come after you.** Search keeps working by induction.”



“**Exploiting user feedback, principally clicks, has been the major theme of ranking work for the past decade.** One can regard each as a massive multiple-choice test. Each day, we get to ask humanity a billion questions of the form, ‘Which of these 10 documents is most relevant to your query?’ Then some person helpfully answers with a click, which teaches us something about the world.”

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# Scale And Quality



**John Giannandrea**

*Apple Chief, Machine Learning & AI Strategy  
Former Google Head of Search & AI*

**Q.** And user data can help a search engine figure out which places to crawl more or less frequently?

**A.** Yes.

**Crawling**

*Tr. Testimony*



**Ben Gomes**

*Former SVP, Search*

**Q.** Each of the innovations of spelling, synonyms, autocomplete, they benefit and continue to improve based on query data, correct?

**A.** Yes.

**Query Refinement**

*Tr. Testimony*



**Prof. Douglas Oard**

*Plaintiff Expert, Prof. of Advanced Computer Studies,  
Univ. of Maryland in College Park*

**A.** . . . Google uses user-side data to see what kinds of pages people click on and stay on . . . [or] come back from right away, and then they look at the characteristics of those pages and use that to train systems to decide . . . whether to keep future pages in the index or not.

**Indexing**

*Tr. Testimony*



**Dr. Pandu Nayak**

*VP, Search*

**Q.** . . . RankEmbed BERT is trained on click and query data, right?

**A.** Yes, it is.

**Retrieval**

*Tr. Testimony*

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# Scale And Quality



**Dr. Eric Lehman**

*Former Distinguished Software Engineer*

“Exploiting user feedback, principally clicks, has been the major theme of ranking work for the past decade.”

*UPX0213 (2017)*

**Ranking**



**John Giannandrea**

*Apple Chief, Machine Learning & AI Strategy  
Former Google Head of Search & AI*

**A.** . . . [Scale is] relevant because you need to decide which features to prioritize.

*Tr. Testimony*

**Wholepage Ranking**



**Prof. Douglas Oard**

*Plaintiff Expert, Prof. of Advanced Computer Studies,  
Univ. of Maryland in College Park*

**A.** . . . [Search features] benefit from user-side data in the same way that web search might. In fact, perhaps to a greater degree because it might be more difficult to interpret features and images than to interpret words on web pages.

*Tr. Testimony*

**Search Features**



**John Giannandrea**

*Apple Chief, Machine Learning & AI Strategy  
Former Google Head of Search & AI*

**Q.** So the more queries a search engine sees, the more opportunities it has to improve in this manner?

**A.** The more opportunities the engineers have to look for patterns and improve the algorithm, yeah.

*Tr. Testimony*

**Development**

**REDACTED FOR PUBLIC FILING**





# Scale And Advanced Machine Learning



**Dr. Pandu  
Nayak**  
VP, Search



- Q. And RankBrain is an expensive process to run?  
A. It's certainly more expensive than some of our other ranking components.  
Q. So that's, in part, one of the reasons why you just wait until you're down to the final 20 or 30 before you run RankBrain?

A. That is correct.

Q. **RankBrain is too expensive to run on hundreds or thousands of results?**

A. **That is correct.**

\* \* \*

Q. And running the AI model, such as MUM, can be more expensive than the core models that we looked at?

A. Yes. **I just want to emphasize that the difficulty -- I mean, certainly they will be more expensive, no question about that. But the bigger thing is running those bigger models at the latency that you need and the throughput that you need is very, very hard.** Running things at such scale to get sub second latencies, to get them at the QPS that we need to run it, is very, very difficult. It's not just that it's expensive.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Mobile And Desktop Scale Differ



**John**

**Giannandrea**

*Apple Chief, Machine Learning & AI Strategy;  
Former Google Head of Search & AI*



**Q.** And you write, “Not having mobile queries at scale is a huge liability.” . . . Mobile queries are, obviously, queries that come from your phone, right?

**A.** From mobile devices generally, yes.

\* \* \*

**Q.** A query mix from a mobile device is different than a query mix from a desktop device?

**A.** Generally, I would agree with that, yes.

**Q.** And so having -- and I think this is the point you’re making in your email. **Having mobile queries at scale is important in answering mobile queries.**

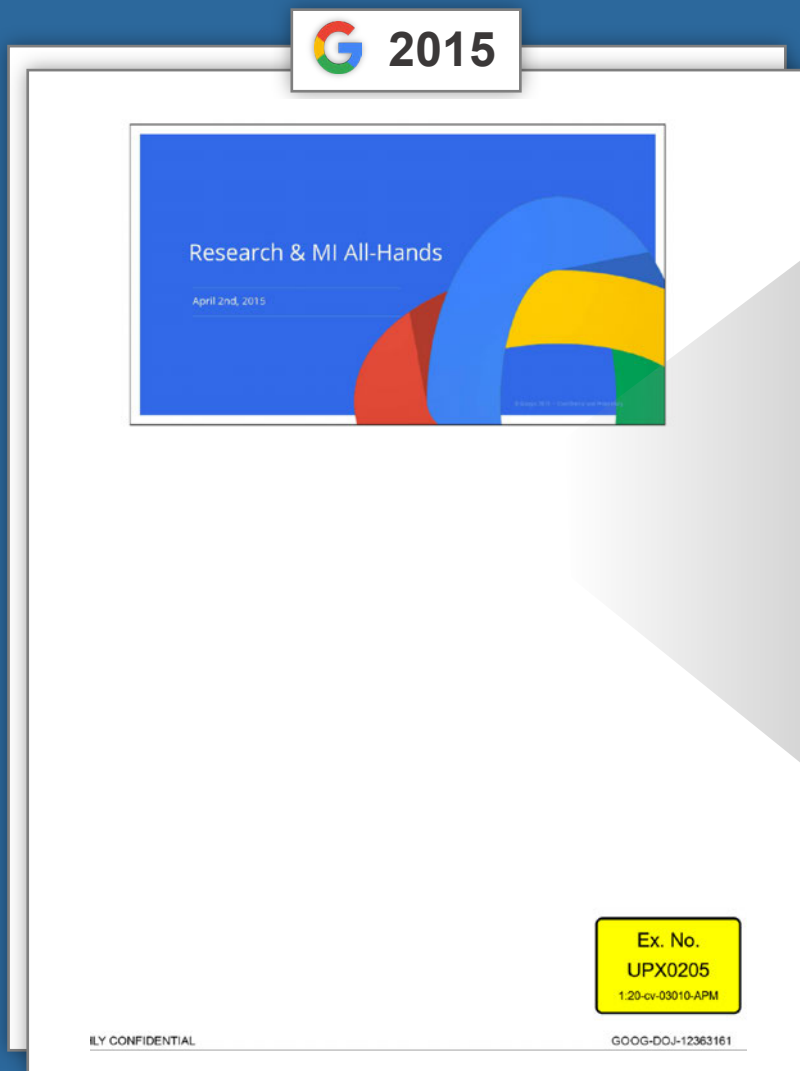
**A.** **Yes, I agree with that.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Scale Is Particularly Important For Tail Queries



“[A]t Google, because of our scale, even the most obscure choice would have been exercised by thousands of people.”

**REDACTED FOR PUBLIC FILING**



# Diminishing Returns Are Not Vanishing Returns



**Prof. Kevin  
Murphy**

*Google Expert  
Prof. of Economics,  
Univ. of Chicago*

- Q.** And you're not offering an opinion about when click-and-query data is valuable and when it's -- when there's diminishing returns?
- A.** Well, I think -- I would think as an economist, **there's pretty much always diminishing returns, but that doesn't mean they're not valuable even after some diminishing returns have set in.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**

## **B.** Anticompetitive Effects Of Google's Distribution Contracts

1. Prevent Rivals From Obtaining Scale
2. Reduce Incentives To Invest
3. Prevent Expansion Of Safari Suggestions
4. Payments Disincentivize Apple Entry
5. Right Of First Refusal Disincentivizes Apple Entry
6. Blunt Nascent Competition

**REDACTED FOR PUBLIC FILING**



# Google's Contracts Change Costs And Benefits



**Prof. Michael Whinston**

*Plaintiff Expert  
Prof. of Economics &  
Management, M.I.T.*

A. . . . [W]hat these contracts are **doing are two things**. One, because of the tying up of queries, the contracts are **reducing the benefits of investing** . . . . They're also . . . **making it more costly for you to increase your quality**, more difficult because now it's harder for you to experiment, it's harder for you to figure out how to get quality to be higher.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Rivals Use Cost-Benefit Analysis



**Mikhail  
Parakhin**

*CEO, Advertising &  
Web Services*



- Q.** And at high level, what criteria do you consider when making investment decisions for search?
- A.** There are multiple criterias to be taken into account. It is -- you know, **fundamentally it boils down to what kind of long-term revenue we can achieve . . . .**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**

# Harms The “Competitive Process”

**REDACTED FOR PUBLIC FILING**





# Index Underinvestment

G 2017

Redacted

o As a consequence of efforts to drive cost efficiency (Search machines spend has declined from 2014 to 2017 despite 45% total increase in queries across that time), we have under-invested in Machines and seen impacts to product quality (smaller index, higher latency, blocked launches, serving errors)

Redacted

Redacted

Ex. No.  
UPX0752  
1:20-cv-03010-APM

HIGHLY CONFIDENTIAL

GOOG-DOJ-13031017

“As a consequence of efforts to drive cost efficiency (Search machines spend has declined from 2014 to 2017 despite 45% total increase in queries across that time), **we have under-invested in Machines and seen impacts to product quality (smaller index, higher latency, blocked launches, serving errors)**”



**Dr. Pandu Nayak**  
VP, Search



- Q.** You talked about Google’s index size. In 2020, the index was about 400 billion documents; is that right?
- A.** I don’t know the specific number, but maybe.
- Q.** Okay. And -- but I think you testified that that number had come down; is that right?
- A.** **There was a period of time when that number did come down.**
- Q.** **And the decrease in size was concerning to the engineers like you at Google?**
- A.** **Because we want to build a comprehensive index, yes.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**

# Google Walks When It Should Run

**REDACTED FOR PUBLIC FILING**



# Opportunities Spur Investment

G 2020



Judy

Ex. No.  
UPX1083  
1:20-cv-03010-APM

HIGHLY CONFIDENTIAL

GOOG-DOJ-11319047

“Ok, but what is ‘Go Big in Europe’? Starting March 1, 2020, all new Android devices sold in EU will offer a default search engine choice screen during phone setup. Go Big in Europe is a product investments **above and beyond business** as usual to make sure Google is top of mind for EU users.”

**REDACTED FOR PUBLIC FILING**

# Privacy

**REDACTED FOR PUBLIC FILING**



# Google Rejected Incognito Search



**Dr. Prabhakar  
Raghavan**  
*SVP, Knowledge &  
Information Products*



- Q.** ...and that proposal, had it been enacted, would have offered users an option for searching where Google would anonymize the user's data and never log it, right?
- A.** Correct.
- Q.** And Google never adopted that proposal, correct?
- A.** Correct.
- Q.** And one of the concerns was if Google adopted that proposal, users would pick it **and Google would lose billions of dollars in revenue, correct?**
- A.** **That was only one of the concerns, yes.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**

## **B.** Anticompetitive Effects Of Google's Distribution Contracts

1. Prevent Rivals From Obtaining Scale

2. Reduce Incentives To Invest

3. Prevent Expansion Of Safari Suggestions

4. Payments Disincentivize Apple Entry

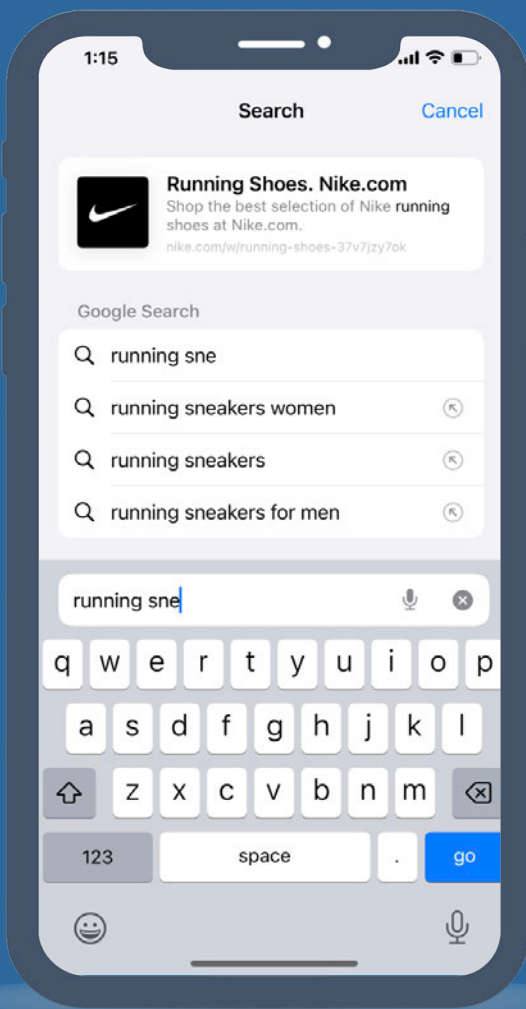
5. Right Of First Refusal Disincentivizes Apple Entry


6. Blunt Nascent Competition



**REDACTED FOR PUBLIC FILING**



# Apple's Suggestions Innovation



 **John Giannandrea**  
*Apple Chief of Machine Learning & AI Strategy*  
*Former Google Head of Search & AI*

**Q.** . . . . I'm not going to have to go to a search engine result page, am I?

**A.** No. You would go right to that website.

**Q.** **I could bypass Google if I hit that button.**

**A.** **That's one way of putting it.**

\* \* \*

**A.** . . . . Our general approach is we think users of our devices are seeking answers, and so **if we can provide the answer, we will do that rather than sending them off to a general search engine.**

\* \* \*

**Q.** And [Suggestions on Safari] saves people time. They save a trip to Google?

**A.** Yeah. **We think it's a much better user experience,** yeah.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# 2016: Google Seeks Suggestions' End

 2016

## 2016 GOOGLE PROPOSED TERM SHEET

Message  
From: Daniel Alegre Redacted@[google.com](mailto:google.com)]  
Sent: 3/17/2016 8:17:49 PM  
To: Ted Lazarus Redacted@[google.com](mailto:google.com)]; Liz Daly Redacted@[google.com](mailto:google.com)]; Joan Braddi Redacted@[google.com](mailto:google.com)]  
Subject: Fwd: Term Sheet  
Attachments: NYC-DraftTermSheet-CONFIDENTIAL.docx

privileged  
fyi term sheet sent out  
----- Forwarded message -----  
From: Kent Walker Redacted@[google.com](mailto:google.com)>  
Date: Thu, Mar 17, 2016 at 9:46 AM  
Subject: Term Sheet  
To: Bruce Sewell Redacted@[apple.com](mailto:apple.com)>  
Cc: Daniel AlegreRedacted@[google.com](mailto:google.com)>

Bruce --  
Per our discussion. We'd be happy to talk to answer any initial questions, and look forward to getting together soon to go through things.  
-- Kent

--  
Daniel  
Daniel Alegre  
President, Global Partnerships

This email and the information it contains are confidential and maybe privileged. If you have received this email in error please notify me immediately. You should not copy it for any purpose, or disclose its contents to any other person. Internet communications are not secure and, therefore, Google does not accept legal responsibility for the contents of this message as it has been transmitted over a public network. If you suspect the message may have been intercepted or amended please call me.  
The above communication may include discussions or proposals of a potential business arrangement, and if so, are provided solely as a basis for further discussion, and should not be intended to and do not constitute a legally binding obligation. No legally binding obligations will be created, implied, or inferred until an agreement in final form is executed in writing by all parties involved.

Ex. No.  
UPX2012  
1:20-cv-03010-APM  
GOOG-DOJ-32224338

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**“Apple will not directly or indirectly take any action or make any omission that adversely impacts the expected economic benefit to Google** (e.g., branding, monetary value, or other components of the commercialization of the search experience) including, without limitation, by editing, filtering, truncating, appending terms to or otherwise modifying any Search Query originating from the Software **(e.g., by using Apple’s ‘suggests’ algorithm in connection with Search Queries)** or by altering UIs.”

**REDACTED FOR PUBLIC FILING**





# 2016: Google Blocks Suggestions' Growth

G Apple 2016

## AMENDMENT TO THE INFORMATION SERVICES AGREEMENT

This AMENDMENT TO THE INFORMATION SERVICES AGREEMENT (this "Agreement") is entered into effective as of September 30, 2016 ("Execution Date") by and among Apple Inc., Apple Distribution International ("ADI"), and Apple South Asia Pte. Ltd. ("ASA" and collectively with Apple Inc., ADI and their respective subsidiaries, "Apple"), on the one hand, and Google Inc., Google Ireland Limited ("GIL"), and Google Asia Pacific Pte. Ltd. ("GAP" and collectively with Google Inc., GIL and their respective subsidiaries, "Google"), on the other hand, amending that certain Information Services Agreement dated December 20, 2002 between Apple, Inc. and Google Inc. (as amended or otherwise modified prior to the Execution Date and as amended by this Agreement, the "ISA Agreement"). The provisions of this Agreement are effective as of the Execution Date, and the remaining provisions of the ISA Agreement remain unchanged and in full force and effect.

### 1. Use and Implementation of Google Services in Apple Software

#### (a) Safari (Web Browser Software)

Apple will pre-set and use the Services as the Default search service for Search Queries in Apple's web browser software (e.g., Safari or successor versions) designed for use on (i) one or more of the following Apple operating systems: iOS, watchOS, tvOS, macOS or any other operating system software made generally available by Apple during the Term, or (ii) the Microsoft Windows operating system (such web browser software, the "Web Browser Software"). During the Term, Apple's use of the Services as Default in the Web Browser Software will remain substantially similar to its use (including, without limitation, vis-a-vis other providers of internet services) as of the Execution Date of this Agreement (such use, the "Permissible Software Default Use").

Subject to the Permissible Software Default Use, Apple shall not be limited in its ability to alter, modify and innovate its Web Browser Software, and Google shall not be limited in its ability to control branding, presentation, and use of the Services.

"Default" means the Services will automatically be used for responding to Search Queries initiated from the Web Browser Software, unless the End User selects a different third-party search service.

"Search Query" means any textual, voice, image or other input entered by an End User in the Web Browser Software or Siri or Spotlight (or successor versions) that requests information; provided however, that subject to the Permissible Software Default Use, Apple may determine an End User's input is not a Search Query so long as Apple's determination is based exclusively on its intent to provide a superior user experience.

Confidential – Subject to Party NDA

1

Ex. No.

JX0033

1:20-cv-03010-APM

GOOG-DOJ-02696793

## AMENDMENT TO THE INFORMATION SERVICES AGREEMENT

“During the Term, Apple’s use of the Services as Default in the Web Browser Software will remain **substantially similar to its use (including, without limitation, vis-a-vis other providers of internet services) as of the Execution Date of this Agreement** (such use, the ‘Permissible Software Default Use’).”

**REDACTED FOR PUBLIC FILING**



# Google Acknowledges Some Limits On Suggestions

Google admits “the ISA does restrict . . . Apple’s diversion of queries from Google to a third-party vertical search engine.”

- 1. There is no basis in the contract language or other documents for Google’s claimed distinction.**

**REDACTED FOR PUBLIC FILING**



# 2016: Google Blocks Suggestions' Growth

 2018

Message  
From: Christopher Haire [redacted@google.com]  
Sent: 8/8/2018 4:15:27 AM  
To: Joan Braddi [redacted@google.com]  
Subject: Re: Topics - Apple meeting

Thanks Joan!

This answers my question. I had remembered from ~2 years ago [redacted] but I wasn't sure if that was contractually obligated. That topic came up this afternoon in a sync with Jet/Liz/myself.

Liz is consolidating analysis and product questions/feedback from the team. She should have those by mid-next week. :)

Chris

On Tue, Aug 7, 2018 at 7:57 PM, Joan Braddi <redacted@google.com> wrote:  
It is probably easier if we talk or let me know what your thinking. In short, we are the default search provider in Safari.

We have had this position for ~16 yrs. Up to about 3 yrs ago, they only referred user to Wikipedia as a suggestion, the rest were provided by Google. However, ~2+ yrs ago we saw them increasingly offer the user other suggested redirections. This concerned us which is why we added into the agmt that they could not expand farther than what they were doing in Sept 2016 (as we did not wish for them to bleed off traffic). Also, they can only offer a "Siri" suggestion exclusively for quality and not because they want to drive traffic to Siri.

Those are really what the agreement states.

[redacted]

**Redacted**

Let me know if this answers your question.

On Tue, Aug 7, 2018, 6:45 PM Christopher Haire <redacted@google.com> wrote:  
-everyone

Hey Joan,

Ex. No.  
UPX0309  
1:20-cv-03010-APM

HIGHLY CONFIDENTIAL

GOOG-DOJ-04278823



**Joan Braddi**

*Partner Advisor, Global Partnership*



“~2+ yrs ago we saw them increasingly offer the user other suggested redirections. **This concerned us which is why we added into the agmt that they could not expand farther than what they were doing in Sept 2016 (as we did not wish for them to bleed off traffic).** Also, they can only offer a ‘Siri’ suggestion exclusively for quality and not because they want to drive traffic to Siri.

Those are really what the agreement states.”

**REDACTED FOR PUBLIC FILING**



# Google Acknowledges Some Limits On Suggestions

Google admits “the ISA does restrict . . . Apple’s diversion of queries from Google to a third-party vertical search engine.”

1. There is no basis in the contract language or other documents for Google’s claimed distinction.
2. **This admission proves that Apple has not made “design decision” to send all queries to Google.**

**REDACTED FOR PUBLIC FILING**

# Freeze The Ecosystem

**REDACTED FOR PUBLIC FILING**

## **B.** Anticompetitive Effects Of Google's Distribution Contracts

1. Prevent Rivals From Obtaining Scale
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6. Blunt Nascent Competition

**REDACTED FOR PUBLIC FILING**



# Google Fears Apple's Entry



**Dr. Mark Israel**

*Google Expert  
Compass Lexecon*

**Q.** Google has considered Apple as a potential entrant that Google has to worry about; is that right?

**A.** At that level, that sounds correct.

**Q.** And Apple has considered entry; right?

**A.** . . . . Considered entry? I've certainly seen testimony that Apple has investigated general search and has said it felt that it could enter if it desired to.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**






# Redacted

## General Search Engines



Redacted

 **John Giannandrea**  
*Apple Chief of Machine Learning & AI Strategy*  
*Former Google Head of Search & AI*

Redacted

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**





# ISA Deters Apple's Entry

G 2019

ATTORNEY CLIENT PRIVILEGED AND CONFIDENTIAL

NOTE TO CARLOS: HIGHLIGHTING ALL PAYMENT-RELATED INFO IN RED

## DEPRECATED

### THE STRATEGIC VALUE OF MARKETING IGSA

This memo lays out Search and Ads Finance's view on the specific steps we should take as we explore increasing IGSA marketing spend in general and as a way to mitigate the risk of Apple (potentially) launching its own search engine, replacing us as a default. It also discusses the drivers of the potential "strategic value" at stake, including several important unknowns. In the multiple areas where a judgment call about competitive actions is required, we seek input from the product team. Wherever we can, we offer facts and analyses to inform such judgment calls.

Comment [1]: Redacted @google.com  
[Redacted@google.com  
I created this backup with all its end notes but  
the text is cut off. The original one is where I  
am editing.

Launching its own search engine is not the only step Apple could take to shift search traffic away from us. It could replace us as the Safari default by Bing, Duck Duck Go or a larger number of local search engines (eg, Yandex, Navr), totally or partially. It could replace us for certain types of queries. Or it could create an Apple branded search engine and outsource the processing of the queries to a third-party (Google or one of these other engines). Most of the analyses below apply to all these cases, except the very rough estimates of the investment required from Apple, and its impact on Apple's margins, which is specific to the "launch its own search engine" scenario.

Redacted

Ex. No.

UPX0002

1:20-cv-03010-APM

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GOOG-DOJ-21350390

**“We believe the value of our payments contribution to Apple’s enterprise value is in excess of \$ [REDACTED] B.”**

**“In total, the annual costs of running a search engine at scale would reduce Apple’s FCF by roughly another \$ [REDACTED] B. The value impact of Apple’s incremental costs would be in the rough order of \$ [REDACTED] B, incremental to the \$ [REDACTED] B discussed above. The value at stake for Apple, including the cost and revenue impact is in the rough order of [REDACTED] dollars.”**

**REDACTED FOR PUBLIC FILING**

## **B.** Anticompetitive Effects Of Google's Distribution Contracts

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**REDACTED FOR PUBLIC FILING**



# ISA Prevented Apple Search Ads

Apple 2020

Subject: Re: Latimer - follow up on deal parameters  
From: "Jeff Lindsay" Redacted @apple.com>  
Received(Date): Fri, 13 Mar 2020 18:09:25 +0000  
To: "Sanjay Mathur" Redacted @apple.com>  
Cc: "Jeff Lindsay" Redacted @apple.com>, "Winston Crawford" Redacted@apple.com>, "Steven Duplinsky" Redacted@apple.com>  
Date: Fri, 13 Mar 2020 18:09:25 +0000

Sanjay

Fortunately, I did think to ask that question, or at least a very close variant.

The answer was: [Redacted] Attorney Client Privilege

Jeff

Jeff Lindsay  
iPhone: Redacted

On Mar 13, 2020, at 10:51 AM, Sanjay Mathur Redacted @apple.com> wrote:

[Redacted] Attorney Client Privilege

Sanjay Mathur / Redacted @apple.com / Redacted

On Mar 13, 2020, at 10:33 AM, Jeff Lindsay Redacted @apple.com> wrote:

[Redacted] Attorney Client Privilege

Ex. No.  
UPX0959  
1:20-cv-03010-APM

CONFIDENTIAL

APLGOOGDOJ-00122176

“The Google contract has some call outs about Apple putting ads in Spotlight and allowing Google to have right of first refusal. So testing aside[,] **if we were to commercialize an ad offering in Spotlight we would first need to work with Google.** This could open up discussions that lead to a form of renegotiations which I don’t think anyone wants to do right now. So **while we have a strong desire to enter Spotlight, it is complex and carries some risk as it relates to the Google contract.**”

**REDACTED FOR PUBLIC FILING**

## **B.** Anticompetitive Effects Of Google's Distribution Contracts

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**REDACTED FOR PUBLIC FILING**

# Branch

**REDACTED FOR PUBLIC FILING**



# Branch: AT&T Asks Google



Message

From: TROWBRIDGE, ELI <[redacted]@att.com>  
Sent: 9/3/2020 10:21:44 PM  
To: Kesh Patel <[redacted]@google.com>  
Subject: RE: Branch

Not a problem.

From: Kesh Patel <[redacted]@google.com>  
Sent: Thursday, September 3, 2020 6:17 PM  
To: TROWBRIDGE, ELI <[redacted]@att.com>  
Subject: Re: Branch

Ok, thanks. Makes sense. Thanks for the details.

Kesh Patel - Sr. Business Development Lead, Android Partnerships NA



On Thu, Sep 3, 2020 at 3:09 PM TROWBRIDGE, ELI <[redacted]@att.com> wrote:

No, I don't think you could say that. On our side, the product team has paused what they were looking at, but per the below, Branch was powering the Finder search starting on the GS10. I believe. That was what Gary Wolfson had originally had reached out to you on in the below thread. I am not sure if/how Samsung has evolved that Finder capability since then. Have you spoken with Samsung about it by any chance?

----- Original message -----

From: Kesh Patel <[redacted]@google.com>  
Date: 9/3/20 5:56 PM (GMT-05:00)  
To: "TROWBRIDGE, ELI" <[redacted]@att.com>  
Subject: Re: Branch

Thanks - to be clear, is it safe to say that Branch is not doing this on ATT devices? I believe you were asking in advance if you could work with Branch Metrics to add this on ATT devices. Just trying to understand, thanks.

Kesh Patel - Sr. Business Development Lead, Android Partnerships NA



On Thu, Sep 3, 2020 at 2:53 PM TROWBRIDGE, ELI <[redacted]@att.com> wrote:  
Hi Kesh,

Ex. No.

UPX0982

1:20-cv-03010-APM

HIGHLY CONFIDENTIAL

GOOG-DOJ-18855684

**“AT&T Mobility intends to allow Samsung’s Finder app on devices to deep link to other apps on a device.** Thus, if the user performs a search in the Finder App, the Finder will search the other apps on the device and provide results from those other apps. Samsung has informed us that the Finder App on Samsung devices distributed by other wireless carriers has this function. **Please confirm Google has no objection to this with respect to the Search RSA Agreement.**”

**REDACTED FOR PUBLIC FILING**



# Google Sought To Stop Branch

G 2020

Message  
From: Sarika Mittal [Redacted @google.com]  
Sent: 6/9/2020 2:18:05 AM  
To: Kesh Patel [Redacted @google.com]  
CC: Marie Mackey [Redacted @google.com]  
Subject: Re: AT&T / Branch Discussion

PRIVILEGED

Thanks Kesh!

On Mon, Jun 8, 2020 at 6:57 PM Kesh Patel <[Redacted]@google.com> wrote:  
PRIVILEGED

You were copied on my note to Eli. Let's see how they respond. In summary, we will be pushing all US carriers to clearly meet the *Alternative Search Service* requirement - really focus on on-device search vs pulling off device content.

Kesh Patel - Sr. Business Development Lead, Android Partnerships NA

On Mon, Jun 8, 2020 at 3:53 PM Sarika Mittal <[Redacted]@google.com> wrote:  
Hi Kesh, Mari,

Sorry, I'm catching up on email. In case the meeting has not happened, can you please add me? If it has, please loop me into any subsequent syncs. Do we have any next steps outlined?

Best,  
Sarika

Ex. No.  
UPX0664  
1:20-cv-03010-APM

On Mon, Jun 8, 2020 at 12:21 PM Marie Mackey <[Redacted]@google.com> wrote:  
PRIVILEGED

Thanks to those who shared the screenshots. I'm taking a look at them. Also, Kesh is setting up a call with a subset of this group for this afternoon to discuss the screenshots. If you'd like to participate, please let him or me know.

Best,  
Marie

Marie Mackey | Commercial Counsel | [Redacted] @google.com | [Redacted]

On Mon, Jun 8, 2020 at 12:04 PM Jiyoung Lee <[Redacted]@google.com> wrote:  
Screenshots from US Open, VZW, ATT, TMO, SPR are captured in the shared doc. (Thanks + Seventeen!)

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GOOG-DOJ-30325452



Anna Kartasheva

Senior Manager, Android Sales & Operations Strategy



“We have discovered that Samsung Finder in its current implementation (incorporating Branch io API) does appear to conduct off-device (web) search across multiple apps **which conflicts with our definition of the Alternative Search[.]**”

\* \* \*

Next steps include **“confirm that other carriers have language (they should) that gives us ability to ask them to discontinue this practice”** and with Samsung **“confirm if they are doing it globally and check what our Alternative search definition allows us to do.”**

**REDACTED FOR PUBLIC FILING**



# Google Replies To AT&T



Message  
 From: TROWBRIDGE, ELI [Redacted@att.com]  
 Sent: 9/3/2020 10:21:44 PM  
 To: Kesh Patel [Redacted@google.com]  
 Subject: RE: Branch

Not a problem.

From: Kesh Patel <[Redacted@google.com]>  
 Sent: Thursday, September 3, 2020 6:17 PM  
 To: TROWBRIDGE, ELI <[Redacted@att.com]>  
 Subject: Re: Branch

Ok, thanks. Makes sense. Thanks for the details.

Kesh Patel - Sr. Business Development Lead, Android Partnerships NA

[Redacted]

On Thu, Sep 3, 2020 at 3:09 PM TROWBRIDGE, ELI <[Redacted@att.com]> wrote:

No, I don't think you could say that. On our side, the product team has paused what they were looking at, but per the below, Branch was powering the Finder search starting on the GS10, I believe. That was what Gary Wolfson had originally had reached out to you on in the below thread. I am not sure if/how Samsung has evolved that Finder capability since then. Have you spoken with Samsung about it by any chance?

----- Original message -----

From: Kesh Patel <[Redacted@google.com]>  
 Date: 9/3/20 5:56 PM (GMT-05:00)  
 To: "TROWBRIDGE, ELI" <[Redacted@att.com]>  
 Subject: Re: Branch

Thanks - to be clear, is it safe to say that Branch is not doing this on ATT devices? I believe you were asking in advance if you could work with Branch Metrics to add this on ATT devices. Just trying to understand, thanks.

Kesh Patel - Sr. Business Development Lead, Android Partnerships NA

[Redacted]

On Thu, Sep 3, 2020 at 2:53 PM TROWBRIDGE, ELI <[Redacted@att.com]> wrote:  
Hi Kesh,

Ex. No.  
 UPX0982  
 1:20-cv-03010-APM

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GOOG-DOJ-18855684

**“Overall, we see some challenges with this request.”**

\* \* \*

“[W]hen we did a search on SS Finder on a device that was connected to the internet, we noticed that many of the searches seem to include search results (localized) obtained from the web rather than on-device.”

\* \* \*

“[S]earch results that pull from ‘Internet content’ in a manner substantially similar to Google (Google offers localized searches) **are an ‘Alternative search service’.**”

**REDACTED FOR PUBLIC FILING**





# Branch And AT&T



**Jeffrey Ezell**

*VP, Business  
Development*



- Q.** . . . . I take it that ultimately it was never definitively resolved one way or another whether AT&T's distribution of Branch on its handsets would make that handset ineligible for rev share; is that right?
- A.** Well, when you say definitively determined, I don't know how to answer that in the sense that I consulted my legal team. They said it was ambiguous, but there was some risk that it would be inconsistent with the RSA. **Then one of my team members floated the idea by Google to see what Google's opinion of it was, and I didn't see the communication on that, but I -- the way it was reported back to me was that Google indicated they felt that it was inconsistent with the RSA.** Whether that's your definition of definitively resolved or not, it was enough uncertainty for me that I decided, as well as the device team who would have been responsible for doing that, **we just decided it wasn't worth . . . the uncertainty.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Branch And Samsung

2018  
SAMSUNG

4/29/2020

Branch Mail - Deepview Benefits

branch

Colin Behr [Redacted@branch.io](#)

## Deepview Benefits

Junghan Kang [Redacted@samsung.com](#)  
Reply-To: [Redacted@samsung.com](#)  
To: Colin Behr [Redacted@branch.io](#), Rishi Khaitan [Redacted@branch.io](#)

Tue, Nov 20, 2018 at 9:41 PM

Hello Colin and Rishi.

Thanks for putting this together and yes, I do realize this is much better experience vs. driving users to App Store without preview.

However, the gating factor here is the Google-Samsung contract terms and anything that can be claimed by Google as 'web search' is something we need to avoid.

I am in discussion with the Google-facing team here and will get back to this thread as soon as I hear from them.

Thank you,  
Junghan

### Original Message

Sender: Colin Behr [Redacted@branch.io](#)  
Date: 2018-11-21 13:20 (GMT+9)  
Title: Deepview Benefits

Hi Junghan,

We've put together a few slides that can hopefully help explain the logic behind Deepviews.

I'm available in case you'd like to chat about this more. In short, the only call to action still drives an app-install, the user cannot get the information that is otherwise available on the webpage, but rather a preview, which acts much like an ad unit.

We've seen in the past that this has a significant impact on conversions, as cited with iHeartRadio, who saw an increase of more than 300% in conversions vs. the standard approach.

[Deepview.pdf](#) 1MB [Download](#)

Thanks,  
Colin

branch | Colin Behr  
VP of Discovery Partnerships

How [Nextdoor](#), [The Knot](#), and [Rent the Runway](#) use Branch

<https://mail.google.com/mail/u/0?ik=bed70449&view=pt&search=all&permmsgid=msg-F53A161772091195745930&dq=1&siml=msg-F53A1617720911955...> 1/2

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BM-0001543

Ex. No.  
UPX1064  
1:20-cv-03010-APM

“[T]he **gating factor** [to broadening Branch’s functionality] is the **Google-Samsung contract** terms and anything that can be claimed by Google as ‘web search’ is something we need to avoid.”

**REDACTED FOR PUBLIC FILING**



# Branch And Samsung

 2020

Message

From: Margaret Lam [Redacted @google.com]  
 Sent: 6/24/2020 5:36:04 AM  
 To: Emily Moxley [Redacted@google.com]  
 CC: John Yoo [Redacted@google.com]; Anna Kartasheva [Redacted@google.com]; Ela Beres [Redacted@google.com]; Jon Dreyfus [Redacted @google.com]; Rosie Lipscomb [Redacted@google.com]; Paul Gennai [Redacted@google.com]; Jim Kolatauros [Redacted@google.com]; Christopher Li [Redacted@google.com]; Kate Lee [Redacted@google.com]; Adrienne McCallister [Redacted@google.com]; Ardan Arac [Redacted@google.com]; Ankita Goel [Redacted@google.com]  
 Subject: Re: Google search powering in-app search on device

A/C Privileged

Hi Emily,

Redacted

Looking forward to our discussion tomorrow - here is a quick [deck](#) detailing the situation and open questions to discuss.

Best,  
-Margaret

Redacted

Redacted

Ex. No.  
 UPX0694  
 1:20-cv-03010-APM

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GOOG-DOJ-22087597



**Anna Kartasheva**

*Senior Manager, Android Sales & Operations Strategy*



“We believe this goes beyond the scope **of what we originally allowed** Samsung (and U.S. carriers) and have started pushing back on them.”

**REDACTED FOR PUBLIC FILING**

# Freeze The Ecosystem

**REDACTED FOR PUBLIC FILING**



# Freeze The Ecosystem



**Sridhar**

**Ramaswamy**

*Former Neeva CEO &  
Founder; Former  
Google SVP, Ads &  
Comms*



A. . . . . And then when it comes to mobile operating systems, **these payments are shrouded in exceptionally complicated contracts that will basically freeze even the exec staff of most of these companies into not wanting to touch it**, because if you wanted to --I think, I told you folks earlier, that we had a pretty senior exec from one of the mobile carriers that, you know, he **truly fell in love with Neeva**, loved the product, he's like, I'm going to make this happen. You know, he goes, talks to like his superiors and to his lawyers, and they're like **'this is a headache, drop it,'** you know; and he drops it.

*Tr. Testimony*

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## **B.** Anticompetitive Effects Of Google's Distribution Contracts

1. Prevent Rivals From Obtaining Scale
2. Reduce Incentives To Invest
3. Prevent Expansion Of Safari Suggestions
4. Payments Disincentivize Apple Entry
5. Right Of First Refusal Disincentivizes Apple Entry
6. Blunt Nascent Competition

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2

## Google's Search Distribution Contracts Have Anticompetitive Effects

A. Google's Distribution Contracts Hoard Defaults

B. Anticompetitive Effects Of Google's Distribution Contracts

C. Even Under Exclusive Dealing, Google's Distribution Contracts Violate Section 2

**REDACTED FOR PUBLIC FILING**

**C.** Even Under Exclusive Dealing, Google's Distribution Contracts Violate Section 2

1. Google's Distribution Contracts Are Exclusive

2. Google's Distribution Contracts Result In Substantial Foreclosure



# Google's Distribution Contracts Are Exclusive

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**C.** Even Under Exclusive Dealing, Google's Distribution Contracts Violate Section 2

1. Google's Distribution Contracts Are Exclusive

2. Google's Distribution Contracts Result In Substantial Foreclosure

“Exclusivity **provisions covering about 40–50%** of the relevant market have been found to foreclose competition illegally . . . .”

*FTC v. Surescripts, LLC*,  
424 F. Supp. 3d 92, 102 (D.D.C. 2020)

“Foreclosure is measured by looking at the **percentage of the market that is ‘tied up’ by the exclusive-dealing** contract, and thus by considering how much of the market is available to rival sellers.”

*Areeda, Antitrust Law* ¶ 768b4 n.39

“Eaton entered into long-term contracts with every direct purchaser in the market, which **locked up over 85%** of the market . . . .”

*ZF Meritor, LLC v. Eaton Corp.*,  
696 F.3d 254, 287 (3d Cir. 2012)

“[W]e agree with plaintiffs that a monopolist’s use of exclusive contracts, in certain circumstances, may give rise to a § 2 violation even though the **contracts foreclose less than the roughly 40% or 50% share** usually required in order to establish a § 1 violation.”

*United States v. Microsoft Corp.*,  
253 F.3d 34, 70 (D.C. Cir. 2001)



# Google's Contracts Cover 50%



**Prof. Michael Whinston**

*Plaintiff Expert*

*Prof. of Economics & Management, M.I.T.*

Google's exclusive contracts cover approximately **50%** of all US general search queries

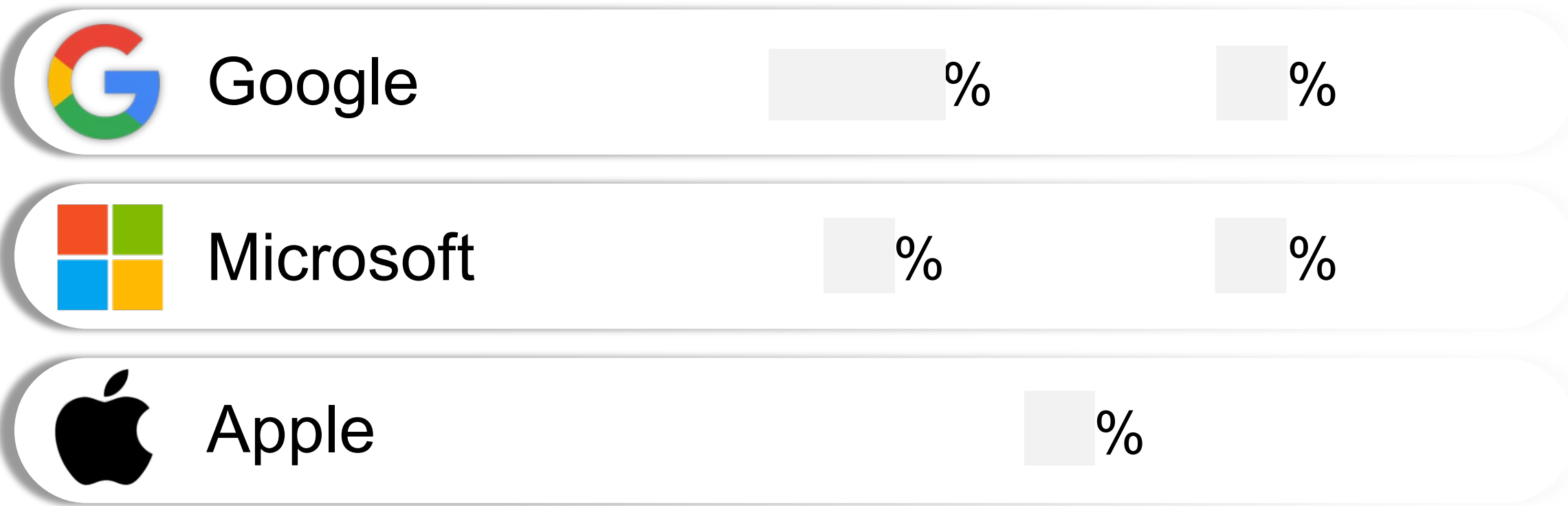
- **28%** covered by the ISA
- **19.4%** covered by RSAs and MADAs
- **2.3%** covered by third-party browser agreements

**REDACTED FOR PUBLIC FILING**



# Universal Default Recognition

Mobile Desktop



**REDACTED FOR PUBLIC FILING**



# 33% Unavailable Even To A Much Stronger Rival



**Prof. Michael Whinston**

*Plaintiff Expert*

*Prof. of Economics & Management, M.I.T.*

Approximately **33%** of US queries are covered by Google's contracts and would not change even if Google faced a much stronger rival.

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“To require that § 2 liability turn on a plaintiff’s ability or inability to reconstruct the hypothetical marketplace absent a defendant’s anticompetitive conduct would only encourage monopolists to take more and earlier anticompetitive action.”

*United States v. Microsoft Corp.*, 253 F.3d 34, 79 (D.C. Cir. 2001)

“[W]e think the Commission is entitled to view the situation as it exists.”

*Mytinger & Casselberry, Inc. v. FTC*, 301 F.2d 534, 538 (D.C. Cir. 1962)

# Intent

**REDACTED FOR PUBLIC FILING**



“Evidence of the intent behind the conduct of a monopolist is relevant only to the extent it helps us understand the likely effect of the monopolist’s conduct.”

*United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001) (cleaned up)



# Curation In Action



Email re: "Google market share trends..."

"**[W]atch what you write!** For more information, read the 'Five Rules of Thumb for All Written Communications.'"

*UPX0699 (2009)*



Email re: "Latest market share analysis"

"**I'm aware of not using the word 'market'**... [T]he one big thing I remember from all that Legal training. :)"

*UPX0499 (2009)*



Email re: "note Bing search share"

"**Don't say 'market share'**..., which is bad from an antitrust point of view."

*UPX0702 (2009)*



Email re: "PLEASE READ: INDIVIDUAL OKR DEADLINE and AUDIT NOTICE"

"**We don't ever want to define 'the market'.**"

*UPX0703 (2008)*



Email re: "Digest for [REDACTED]@google.com"

"I'm sure none of us actually mean to write something that will cause a headache for our legal team later on."

*UPX0701 (2010)*



Email re: "Google market share stats for your country"

"**Market is an unhelpful word from an antitrust perspective;** Google operates in very large global advertising and technology markets."

*UPX0929 (2011)*

**REDACTED FOR PUBLIC FILING**



# Google's Anticompetitive Intent

 2019



Ex. No.  
UPX0320  
1:20-cv-03010-APM

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GOOG-DOJ-29824601

## REMINDER OF CONFIDENTIALITY

Everything shared in this training is strictly confidential and proprietary

Additionally any written communication regarding Rev Share and MADA should include Legal (include Redacted@ or Redacted@ and request guidance, mark content as "Confidential - Attorney Client Privileged" )

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Turned “History Off”

**REDACTED FOR PUBLIC FILING**



# Google Turned “History Off”



Sundar Pichai  
CEO



**Q.** As CEO, you knew that **all Google employees, even those under a litigation hold, had their chats default to delete after 24 hours**, correct?

**A.** **I was aware**, you know, **when I became CEO this is how it worked**. This was not an area I was focused on, yeah.

\* \* \*

**Q.** And as CEO, you **never took any steps to change** the policy to delete chats after 24 hours in order to ensure that Google was meeting its obligations to preserve documents for discovery?

**A.** **This was not a change**, yeah, that came to my attention or I considered.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Google Turned “History Off”



**Dr. Pandu  
Nayak**  
VP, Search



- Q.** You understood before this case was filed that history off meant that the chats would be destroyed or deleted after a certain amount of time?
- A.** Yes.
- Q.** And from time to time, **you asked people to turn history off** before or during your chats?
- A.** Well, **I’ve certainly done that, because at the time there was a policy at Google to have history off.**
- Q.** And you –
- A.** And I just wanted to be compliant with that policy.
- Q.** You understood Google’s policy was that history off for chats amongst Google employees?
- A.** Yes.

*Tr. Testimony*

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# What Google Did . . .

**REDACTED FOR PUBLIC FILING**



# *United States & Co-Plaintiff States v. Google LLC*

Plaintiffs' Closing Statement

**REDACTED FOR PUBLIC FILING**

Redacted



# Appendix

**REDACTED FOR PUBLIC FILING**



# Power Of Defaults



**Prof. Antonio Rangel**

*Plaintiff Expert*

*Prof. of Neuroscience, Behavioral Biology,  
& Economics, Caltech*

**Q.** What conclusions, if any, did you reach about the role of habit in consumer search?

**A.** **My opinion, Your Honor, is that the vast majority of individual searches, or queries, are carried out in habit,** and this is why: Consumers search with high frequency. . . .

**Q.** And how, if at all, does being the default search engine affect the formation of habits?

**A.** In my opinion, **being the default search engine is favored, is advantageous, to the point of view of these habits.** . . .

*Tr. Testimony*



**Satya Nadella**

*CEO*

**A.** . . . [Y]ou get up in the morning, you brush your teeth and you search on Google. And so therefore, **with that such level of habit forming, the only way to change is by changing defaults.**

*Tr. Testimony*



**Sridhar Ramaswamy**

*Former Neeva CEO & Founder; Former Google SVP,  
Ads & Commerce*

**A.** . . . [T]he convenience of easy accessibility and tapping into . . . engrained default behaviors are the deciding factors when it comes to whether a search engine gets a lot of usage. . . . **[D]efaults become habits.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Choice Friction



**Prof. Antonio  
Rangel**

*Plaintiff Expert  
Prof. of Neuroscience,  
Behavioral Biology, &  
Economics, Caltech*

**Users must :**

---

**Become “aware that there is a default” and that it can be changed.**

---

**Research “the alternatives and the pros and benefits.”**

---

**“[F]igure out how to implement” the default change.**

---

**“Implement the steps” to change the default.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Mobile Defaults: Microsoft



**Satya Nadella**

*CEO*

**A.** . . . [Changing defaults is easier on desktop because] there are many, many sort of friction points on mobile operating systems.

*Tr. Testimony*



**Rik van der Kooi**

*Former Corporate VP, Advertising*

**A.** . . . On a mobile platform more than anywhere else, even more than on the PC, default is the only thing that matters. . . .

*Des. Testimony*



**Jon Tinter**

*VP, Business Development*

**A.** . . . Defaults matter less [on desktops]. . . .

*Tr. Testimony*

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# Long-Running Android Exclusivity

 2011

**From:** Tim Carter <Redacted@google.com>  
**Sent:** Thursday, April 28, 2011 12:20 PM  
**To:** Chris Barton <Redacted@google.com>  
**Cc:** Anne Laurenson <Redacted@google.com>; Steve Cheng <Redacted@google.com>; John Lagerling <Redacted@google.com>; Nick Solaro <Redacted@google.com>; Hugo Barra <Redacted@google.com>  
**Subject:** Re: Platforms

## Redacted

On 26 April 2011 16:56, Chris Barton <Redacted@google.com> wrote:  
Tim,

America Movil, Verizon, and AT&T were all examples of large carriers that wanted to ship without Google – and did. AT&T shipped Yahoo on Android phones. Verizon shipped Bing. America Movil shipped Yahoo. We need to incentivize carriers to ship Google by using the same approach we at Google have used for many years: “We will pay you revenue share in return for exclusive default placement”. This contract is an exchange.

We have used this type of exchange in syndication deals (AOL, Ask Jeeves), Toolbar deals (Real Networks, Adobe), PC OEM deals (Dell, Sony), and numerous mobile deals for many years.

Without the exclusivity, we are not “getting” anything. Without an exclusive search deal, a large carrier can and will ship alternatives to Google (as seen with Verizon, AT&T, and America Movil).

Android is by far the greatest opportunity for Search monetization in mobile over the next years and is very strategic to Google. You can bet that Microsoft and Yahoo will enter contracts for search on Android through carrier deals if we do not.

Chris

On Tue, Apr 26, 2011 at 3:38 AM, Tim Carter <Redacted@google.com> wrote:  
Chris, Steve,

Ex. No.  
UPX0134  
1:29-cv-03010-APM

Do we really need exclusivity terms? The current [non-US] terms give pretty much the same effect.

OEM preinstall default under MADA + carrier revshare incentive with non-duplication + volume targets [search deals] = many hurdles for a carrier seeking to change the default. They'd need >\$ from the alternative search AND EITHER persuade the OEM to seek (and get from us) an exception to their MADA to allow preinstallation of another search provider with preinstall of other GMS, OR ship a device with no GMS preinstalled at all [MADA requirements].

In practice, shipping without all GMS doesn't happen except in edge cases, like (previously) America Movil. All developed markets have users who expect and demand GMS.

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GOOG-DOJ-00056865



### Chris Barton

Former Strategic Partner & Development Manager



“Without the exclusivity, we are not ‘getting’ anything. Without an exclusive search deal, a large carrier can and will ship alternatives to Google (as seen with Verizon, AT&T, and American Movil).”

**REDACTED FOR PUBLIC FILING**



# MADA And RSA Exclusivity

**G 2018**

Message

**From:** John Yoo [Redacted@google.com]  
**Sent:** 6/18/2018 6:26:39 PM  
**To:** Ben Friedenson [Redacted@google.com]; Jim Kolataurus [Redacted@google.com]; Yuki Paul Genna [Redacted@google.com]; Nike Korsak [Redacted@google.com]; Anna Kartasheva [Redacted@google.com]; Richardon [Redacted@google.com]; Ulra Cactano [Redacted@google.com]; Anna Kartasheva [Redacted@google.com]  
**Subject:** Re: [Mon 6/18] Request from Philipp

Hi Jim and Paul,

The following documents have been updated for your review:

1) Overview of MADA / RSA Terms (doc).

link: <https://docs.google.com/document/d/1zZsPuW3EVAH13Zdc40I3wj1VSpWgdiEFCLbelcpw/edit?hl=en>

2) Screenshots of MADA / RSA Devices (slides).

link: [https://docs.google.com/presentation/d/1QkEBSR9t4ruuW0uXNFRo8Y1rTEbSx9qE250b86SmaUe/edit#slide=id.g39b8d8a80f\\_0\\_252](https://docs.google.com/presentation/d/1QkEBSR9t4ruuW0uXNFRo8Y1rTEbSx9qE250b86SmaUe/edit#slide=id.g39b8d8a80f_0_252)

If okay in its current form, @Jim could you kindly send to Philipp ahead of the meeting scheduled for 3:15pm?

Thank you, and happy to address any further concerns / feedback.

Regards,  
John Yoo

John Yoo | Android Partnerships Finance | Redacted@google.com | Redacted

On Mon, Jun 18, 2018 at 8:58 AM Ben Friedenson <Redacted> wrote:  
Hi All,

This arose out of a separate conversation with Philipp where he had asked a x-finance team to look at major areas of economic opportunity. After discussing our Search-related partnerships (both Android and non-Android), he asked if we could produce the table here.

He alluded to 2 reasons for wanting this information:

- To have a "cheat sheet" of what we currently get with MADA/RSA to better inform his negotiations with non-Carrier/non-OEM partners (ex. parties who also have their own Assistant)
- To also understand among major Android partners what we currently get and when the next conversations might take place.

My read from the conversation is that the above is information that Philipp has in pieces, but not in a centralized cheat sheet. As understanding how our various products/services are treated in our Android partnerships would be applicable across a variety of contexts, the request for a cheat sheet that he could have as reference.

Please let me know if the above context helps.

Thanks!

Ex. No.  
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1:20-cv-03010-APM

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## Screenshots of Current MADA and RSA requirements, subject to change

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Microsoft Edge in Hotseat  
Search Provider Bing  
Cortana, Bing, Bing widget on DHS  
QSB  
Google Apps  
Play Store  
Assistant long press

Risk / Requirements

Chrome in Hotseat & Default  
No 3P Search  
(DHS exclusivity in EEA)  
No 3P Assistant on DHS

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# Third-Party Browser RSAs: Key Exclusionary Terms

 2012-Present

Redacted

Ex. No.  
JX0031

Redacted

Ex. No.  
UPX5131

Redacted

Redacted

Ex. No.  
UPX5210

Mozilla must preset Google as the default search engine for all Firefox's search access points:

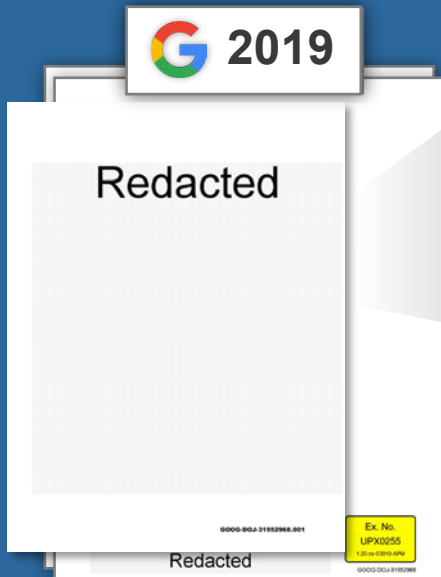
- all search boxes within the browser frame,
- the navigation bar,
- all search boxes displayed on the default homepage and new tab page, and
- right-click search functionality.

RSAs with Opera and UCWeb have similar terms.

**REDACTED FOR PUBLIC FILING**



# Scale And Quality



**“Using more data, even noisy data, is always better than using less data.”**

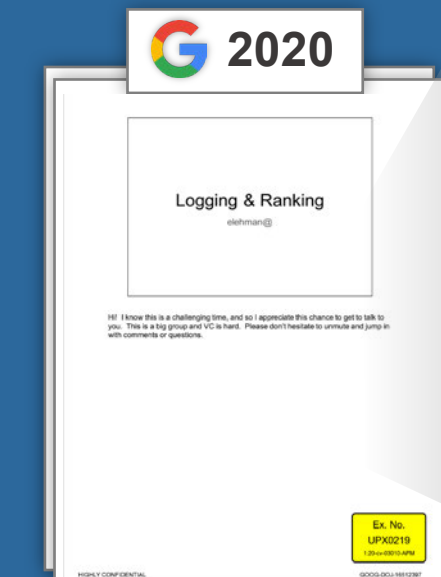
“Can we scale up ML [machine learning] models to be better than NavBoost? We need a more thorough study of this, but as far as I can tell **none of these deep learning models are as powerful as NavBoost.**”

**“But most of the knowledge that powers Google, that makes it magical, comes from the minds of users.”**

**“As people interact with search, they teach us.** For example, a click here means the image was better than the web result. A long gaze there means the knowledge card was interesting. **We log these actions, and then scoring teams extract lessons,** small and big.”

**“Not just one ranking system learns from search logs. Learning from logs is the main mechanism behind ranking.** In addition to traditional systems, all major machine learning systems for ranking rely on logs: RankBrain, RankEmbed, DeepRank. Web ranking is only a part of search, **but many search features use web results to understand what a query is about and trigger accordingly.**”

**REDACTED FOR PUBLIC FILING**







# Scale And Quality



**Prof. Douglas  
Oard**

*Plaintiff Expert  
Prof. of Advanced  
Computer Studies,  
Univ. of Maryland in  
College Park*

- Q.** And, Professor Oard, can you provide a comparison of how much data Google uses in some of its ranking compared to Bing?
- A.** Sure. . . . If Bing, which, according to Professor Fox's report, has something on the order of 5 percent of Google's user-side data, then we wouldn't be talking about 13 months of data, **we'd be talking about more than 13 years of data, two decades of data.** But, really, months aren't the right unit anyway because the amount changes over time. So **the amount of user-side data in a month is higher now than it was 20 years ago. So even two decades probably wouldn't be enough.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Experimentation Requires Scale



**Gabriel  
Weinberg**  
CEO



- Q.** And would additional searches have allowed DuckDuckGo to better compete with Google in the search market?
- A.** . . . [A]s I mentioned to the question on experimentation, **we lack the scale to do as much experimentation as we want, especially for all these different search modules which are only a small portion of the query space, is what we would call it. So more searches always yields better relevancy over time.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Innovations Rely On User-Side Data



**Ben Gomes**  
SVP, Education



**Q.** Each of the innovations of spelling, synonyms, autocomplete, they benefit and continue to improve based on query data, correct?

**A. Yes.**

**Q.** . . . You agree that having click and query data helps Google or any search engine to deliver better search results, correct?

**A. Yes.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Mobile And Desktop Scale Differ



**Mikhail Parakhin**

CEO, Advertising & Web  
Services



**A.** . . . [Y]ou cannot easily sort of leverage data in one form factor to easily improve quality in another.

*Tr. Testimony*



**Dr. Pandu Nayak**

VP, Search



**A.** . . . . A good example of that is, let's say you issued the query 'Bank of America' for your bank. Then on desktop, chances are you want to go to the online home page of Bank of America to do online banking. Whereas, on mobile, chances are you were looking for the locations of the ATMs for the bank, Bank of America. So the intent was slightly different. . . .

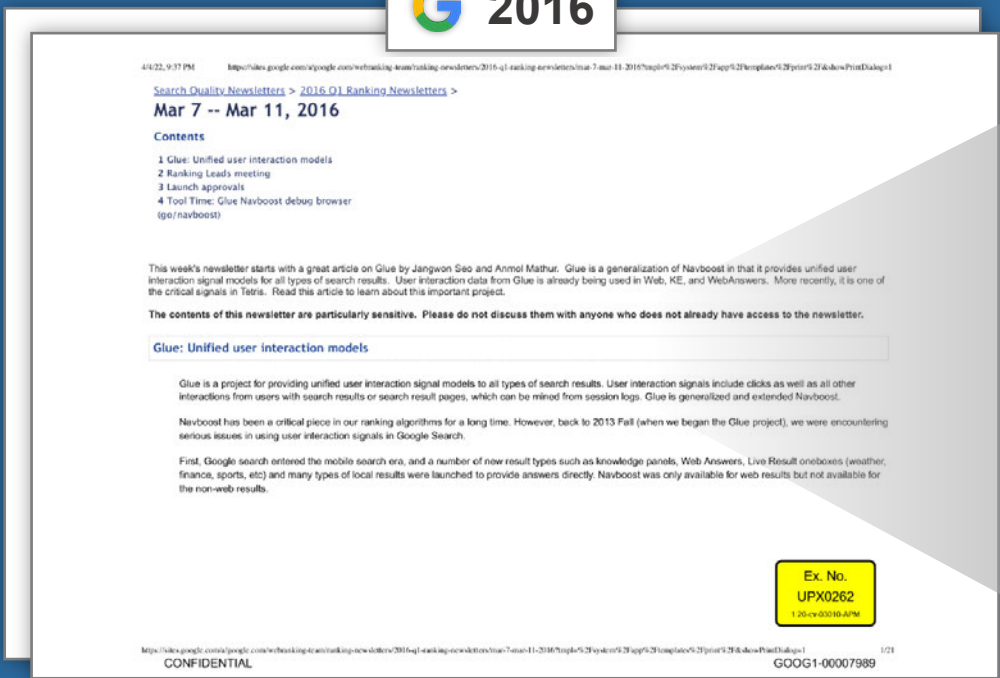
*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Mobile And Desktop Scale Differ

 2016



“[W]e found user search intent and interaction patterns on mobile are substantially different from the patterns on desktop . . . .”

**REDACTED FOR PUBLIC FILING**



# Scale Improves Search Ads Monetization

2015



Redacted

Ex. No.  
UPX0244  
1:20-cv-03010-APM

1

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MSFT-LIT2\_0001414665



“ . . . [B]etween 2013 and 2015, [RPM] suddenly shot up where, okay, we’ve had this data, we’ve improved our algorithms, and now RPM is rising really quickly. . . .”

Last 5 years of Search Ad marketplace performance



- Curve represents how RPS moves with growth in supply. Supply drives advertiser demand, which drives RPM and improves quality of product, which drives more supply.
- RPM increases with scale as advertisers increase bids to be on top in the auction, and algorithms improve with more data
- Curve is initially steep as small increases in scale meaningfully improve advertiser participation, making it possible to offset fixed cost of investing in another platform
- Product innovation shifts performance to a higher RPM curve, not along the same curve
- Yahoo scale lift broadly matched our expectations in CY12
- Most of subsequent performance improvements come from Innovation and Demand expansion

**REDACTED FOR PUBLIC FILING**



# Scale Is Particularly Important For Tail Queries



**Prof. Douglas  
Oard**

*Plaintiff Expert  
Prof. of Advanced  
Computer Studies,  
Univ. of Maryland in  
College Park*

**A. . . . And so it follows exactly what you would expect, that the long tail queries are where user-side data can be particularly valuable,** because if I have a head query, a query that's occurring very often . . . then I don't have to have a whole lot of user-side data before I've seen a lot of [that head query]. And if I see a lot more [of that head query] I'm not probably going to get a whole lot better. But **if I'm seeing zero or 20, there's a big difference.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Scale's Benefits Outweigh Enormous Costs



**Prof. Kevin  
Murphy**

*Google Expert  
Prof. of Economics,  
Univ. of Chicago*

**Q.** Maintaining data has some cost?

**A.** One would presume.

**Q.** Google does -- you presume Google does a cost-benefit analysis in deciding to preserve data?

**A.** As an economist, yes, I would presume they do that kind of analysis.

**Q.** And Google wouldn't maintain data if there was no possibility of ever using it for any purpose, right?

\* \* \*

**A.** . . . I would presume if they maintain it and it's costly to maintain it, there's a reason they maintain it.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**





# DRE Ignored



**Dr. Prabhakar  
Raghavan**  
*SVP, Knowledge &  
Information Products*



**Q.** Have you heard anything about Professor Fox's conclusions that he reached?

**A.** No.

\* \* \*

**Q.** You've certainly never seen or heard anything about an experiment . . . conducted by Professor Fox; correct?

**A.** No.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Generative AI Models Do Not Eliminate Need For Scale



**Sridhar  
Ramaswamy**

*Neeva CEO &  
Founder; Former  
Google SVP, Ads &  
Comms*



- Q.** Does AI eliminate the importance of behavioral data in trying to figure out what the user is looking for?
- A.** . . . AI let's you do, as I said, things like summarization, presenting a single answer in ways that, honestly, search engines of old could not do. But the middle problem of figuring out what are the most relevant pages for a given query in a given context still benefits enormously from query click information. **And it's absolutely not the case that AI models eliminate or supplant that need.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# AI Is Not “Magic” To Solve All Problems



**Dr. Prabhakar  
Raghavan**

*SVP, Knowledge &  
Information Products*



Q. And the trend you’re referring to there is AI and LLMs; right?

A. And the **growing belief that these large language models can solve any problem**, which I was observing with some alarm and continue to observe with some alarm around me.

Q. And you don’t believe that; right?

A. It’s not that I don’t believe it. I think people have expected -- have come to expect these things to do magic, and **the magic isn’t quite here yet.**

\* \* \*

Q. And that’s your view today, that it’s not the case that ten years from now we’re going to do everything through chatbots and LLMs; right?

A. **It’s not the case, I believe, that everything we do in ten years will be through LLMs.**

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Rivals Use Cost-Benefit Analysis



Satya Nadella  
CEO



- Q.** If Bing had entered into -- got Safari traffic, would that allow Microsoft to invest more in mobile search?
- A.** Absolutely. Because, one, in order to start investing -- we're making all the fixed cost investments already. **And for us to make additional fixed cost investments on, say, search relevance or search scale, we needed to get more of the dynamic data and mobile distribution.** And so, yes, absolutely, that would have made us more competitive as a search product that end users would have liked and advertisers and publishers would have benefited from as well.

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Search Privacy Importance



**Sridhar**

**Ramaswamy**

*Former Neeva CEO &  
Founder; Former  
Google SVP, Ads &  
Commers*



**A.** Search, as everybody here knows, is deeply personal. We search for all manners of things, headaches we have, fears we have, things that we want to do. And the fact that commercial search experiences sort of literally look at everything that we do or use the contents of our searches to show ads in other unexpected places is a constant source of unease and distrust.

\* \* \*

**A.** . . . [I]n all of our surveys, many tens of percentages of people -- definitely a majority -- have concerns about a lack of privacy online, definitely with search engines . . . .

*Tr. Testimony*

**REDACTED FOR PUBLIC FILING**



# Suggestions Threatens Google

G 2014

Message  
From: Surojit Chatterjee [Redacted@google.com]  
Sent: 8/13/2014 2:42:33 PM  
To: Joan Braddi [Redacted@google.com]

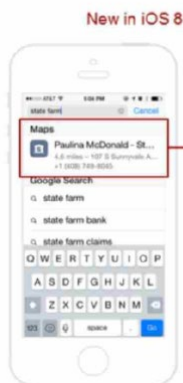
## Bottom Line: It's bad

In iOS 8, Apple is introducing Spotlight suggestions into Safari search. We expect these suggestions to siphon queries away from Google in verticals where spotlight is triggered.

Search-team [estimates](#) put query loss from Apple's changes at 10-15% of Safari traffic.

We estimate a smaller revenue loss of 4-10% of iOS Safari revenue. This estimate depends greatly on several variables for which we do not currently have data.

More investigation and better data is needed to come up with more accurate expected revenue impacts ahead of the launch.



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Joan Braddi

Partner Advisor, Global Partnerships



- Q. And they wouldn't go to Google at all; is that right?
- A. Correct.
- Q. **And the user might find a new pair of running sneakers with one less step; is that right?**
- A. **Could be.**
- \* \* \*
- Q. But if the user clicks on the top hit, the user would be diverted from Google, right?
- A. If the user selects that, yes.
- Q. **And then Google wouldn't have a chance to make money on the query in that case, right?**
- A. **In that case, yes.**

Tr. Testimony

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