

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, ET AL.,)	
)	
Plaintiffs,)	
)	
vs.)	CV No. 20-3010
)	Washington, D.C.
)	November 14, 2023
GOOGLE LLC,)	9:30 a.m.
)	
Defendant.)	Day 40
)	Morning Session

TRANSCRIPT OF BENCH TRIAL PROCEEDINGS
BEFORE THE HONORABLE AMIT P. MEHTA
UNITED STATES DISTRICT JUDGE

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WITNESS INDEX

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WITNESSES	DIRECT	CROSS	REDIRECT	RECROSS
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DEFENDANT'S:

KEVIN M. MURPHY	9994			
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PLAINTIFF'S

ADMITTED

UPX2012

10024

1 P R O C E E D I N G S

2 THE COURT: Good morning, everyone. Please be
3 seated.

4 COURTROOM DEPUTY: Good morning, Your Honor.
5 This is Civil Action 20-3010, United States of America,
6 et al., versus Google LLC.

7 Kenneth Dintzer for the DOJ.

8 Jonathan Sallet and William Cavanaugh on behalf of
9 Plaintiff States.

10 John Schmidtlein on behalf of Google.

11 THE COURT: Okay. Good morning, everyone. I hope
12 everybody is well.

13 All right. Are we ready to continue with
14 Professor Murphy?

15 MR. DINTZER: Your Honor, we have a
16 confidentiality issue to cover on a document that will be
17 coming up with Professor Murphy.

18 THE COURT: Okay.

19 MR. HERRMANN: Good morning, Your Honor.
20 May I approach?

21 THE COURT: Sure.

22 MR. HERRMANN: Karl Herrmann. K-a-r-l,
23 H-e-r-r-m-a-n-n.

24 Your Honor, our dispute is on UPX1128.

25 It's -- in the document I've passed up, the green

1 figures, we do not oppose redacting because we do not need
2 to unredact them. But the yellow figures we oppose
3 redacting.

4 Our view is that this exhibit from 2016 reflects
5 high-level figures, it does not reflect any specific
6 negotiation and is, therefore, inappropriate to redact.

7 THE COURT: Can you just give me a sense of what
8 this is?

9 MR. HERRMANN: Yes, Your Honor. This is a
10 high-level analysis of Google's RSA deals with carriers and
11 OEMs.

12 THE COURT: Okay.

13 MR. HERRMANN: Just a little more detail: This is
14 the internal approval of the template and strategy for
15 Android RSA deals.

16 THE COURT: Okay. Mr. ...

17 MR. SAFTY: Good morning, Your Honor.
18 Graham Safty of Williams & Connolly on behalf of Google.

19 If we may just briefly address a couple of these
20 proposals from the Department, beginning with sort of
21 fifth bullet point under "Discussion."

22 There's a very targeted redaction there that gets
23 to some differences in financial terms between different
24 partners, and that's the kind of information that Google has
25 sort of consistently sought to redact in order to protect

1 its ability to negotiate these ordinary arm's-length
2 business agreements going forward. I think the vast
3 majority of the document, including the "Discussion" section
4 is unredacted.

5 There's also this -- a specific financial
6 projection here, the number that's in the third bullet point
7 under "Discussion." Again, that's the kind of sort of
8 financial outlay that I think third parties, including those
9 that were presented by deposition video last week and the
10 week before, have sought to redact, and it maintains its
11 commercial sensitivity even several years on, given that
12 these are individual financial terms.

13 While I think the department has pointed out that
14 this relates to agreements generally, we've all heard from a
15 handful of OEMs and a handful of carriers in this case, and
16 so I think the further disclosure would sort of further
17 implicate and impact those business negotiations with those
18 counterparties going forward since everybody knows who the
19 third parties at interest here are.

20 THE COURT: Okay.

21 MR. HERRMANN: Your Honor, briefly, the figures
22 would not reveal any specific detail of any third party.
23 Again, this is an aggregation. I'm sure how it could. I'm
24 not aware of any third party objecting to disclosure of
25 this.

1 Additionally, under the fifth bullet point, which
2 is at the top of 098, which Mr. Safty referenced, at no
3 point has anyone ever said that these types of partners play
4 off each other in any kind of negotiation. These are
5 two different categories of partners, so revealing this
6 information would reveal nothing that could harm Google.

7 THE COURT: Let me just ask: In terms of the
8 relative traffic payout to these two categories, is that
9 something -- again, not specific numbers, but the relative
10 rev share percentages, is that something that is otherwise
11 known?

12 MR. SAFTY: Your Honor, it's not.

13 As you've heard evidence from, for instance,
14 Motorola testifying by a deposition video, they don't
15 disclose what their rev share percentages or the amounts
16 paid to, say, Verizon or AT&T, just as Verizon and AT&T
17 don't disclose it to Samsung.

18 So the notion that there's no sort of playing off
19 of or no sort of three-dimensional dynamics, I think is just
20 inaccurate with the testimony that Your Honor has heard
21 about how carriers sort of control the ID oftentimes in the
22 United States because they decide how the device is
23 configured. In other geographies, the dynamics are
24 different because OEMs typically decide how the device is
25 configured.

1 So the way that Google negotiates with OEMs on the
2 one hand and carriers on the other is, of course, different,
3 not only partner by partner but category by category. And
4 again, the vast bulk of the discussion here is unredacted,
5 it's just specific financial terms that we seek to redact as
6 we have sort of consistently throughout with respect to
7 these partner level differences.

8 THE COURT: Yeah, okay.

9 MR. HERRMANN: Briefly, Your Honor, I should
10 clarify. These are not revenue share percentages, these are
11 coverage figures, and this is the type of information that
12 Your Honor unredacted from the sealed testimony of
13 Ms. Kartasheva and in other exhibits related, so this would
14 be of the same type, and it, therefore, should be unredacted
15 here.

16 THE COURT: Okay.

17 So I haven't heard Mr. Safty push back on
18 Bullets 1 and 2.

19 MR. SAFTY: Yes.

20 And I understand the department's position with
21 respect to the first two being different, that's why I'm
22 focused on the TAC payout lines. Those are not coverage
23 figures, that means revenue share percentages.

24 THE COURT: No. I understand.

25 MR. SAFTY: So to the extent that the Court feels

1 that there is some need, after balancing the *Hubbard*
2 factors, to unredact the number of partners implicated and
3 these coverage figures, we do view that as different in kind
4 than the revenue and revenue-share-related discussion that
5 occurs in the third and fifth bullet points.

6 THE COURT: Okay.

7 All right. So I think this is how I'll come out
8 here. I think the proposed -- or what has been proposed to
9 be redacted in Bullets 1, 2, and 3 can be referred to on the
10 public record. They are sort of roll-up, high-level numbers
11 of number of partners and general figures about search
12 revenues and coverage.

13 The third bullet point refers to a TAC number, but
14 it's a very high-level TAC number and a projection. We've
15 already seen earlier in trial that Google does release
16 information publicly about its TAC figures.

17 And so while this precise number may not be --
18 have been disclosed publicly, it's not something that Google
19 is not, as a category at least, publicly disclosed in the
20 past, and, frankly, I don't see the prejudice from an
21 aggregate number that was projected back in -- I can't quite
22 tell when this email was but --

23 MR. HERRMANN: 2016, Your Honor.

24

25

1 THE COURT: 2016.

2 As for the fifth bullet, I think I will permit --
3 and I think that it appropriately ought to be under -- it
4 should be redacted as confidential business information
5 that, if made public, could harm Google's competitive
6 position, and specifically, this is of the kind of other
7 information that I have -- specifically, revenue share
8 percentages that are paid out.

9 And even though these aren't specific to any
10 particular partner, they are relative to categories of
11 partners. And I think -- for that reason, I think we ought
12 to -- I think that ought to remain confidential and under
13 seal, okay?

14 MR. HERRMANN: Thank you, Your Honor.

15 THE COURT: All right.

16 MR. DINTZER: On the confidentiality note,
17 Your Honor, also we have negotiated with Google on --
18 regarding unredacting Dr. Murphy's -- or Professor Murphy's
19 slide deck, and we are largely in agreement so there's no
20 issues for the Court to resolve at this time.

21 THE COURT: Terrific. Thank you, everyone.

22 And, Mr. Dintzer, where are we on your anticipated
23 closed session that we discussed yesterday?

24 MR. DINTZER: So we went line by line, Your Honor.
25 It is my hope that we won't need it.

1 THE COURT: Okay.

2 MR. DINTZER: And so if, at some point, as the
3 Court may imagine, we have to drill down a little bit with
4 the witness, then we may resume that request, but at this
5 point, we are hoping to go without it.

6 THE COURT: Okay. Very good. Thank you.
7 I appreciate it.

8 And we'll just continue to remind Professor Murphy
9 about the sensitivity of certain numbers.

10 MR. DINTZER: Of course.

11 The DOJ Plaintiffs don't have anything else,
12 Your Honor.

13 THE COURT: Okay.

14 All right. Well, let's bring Professor Murphy in,
15 and we'll get started.

16 All right, Professor Murphy. Welcome back and
17 good morning.

18 THE WITNESS: Thank you. Thank you, Your Honor.

19 THE COURT: All right. Mr. Dintzer, we are ready
20 when you are.

21 MR. DINTZER: Thank you, Your Honor.

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KEVIN M. MURPHY, WITNESS FOR THE DEFENDANT, HAVING BEEN
PREVIOUSLY SWORN, RESUMED THE STAND AND TESTIFIED FURTHER AS
FOLLOWS:

DIRECT EXAMINATION (CONTINUED)

BY MR. DINTZER:

Q So, sir, we're going to touch back on choice
screens for just a second.

MR. DINTZER: And if I may approach, Your Honor,
I have a document. We're actually -- we're ready to hand
out the binders, Your Honor. We've already given them to
Google's counsel.

May I approach, Your Honor?

THE COURT: You may.

BY MR. DINTZER:

Q So we have two sets of binders.
We'll continue to put them on the screen as we
can, but just so you have them, especially for the
confidential materials.

If you could go to Exhibit 677. And it will be
here on the screen.

A Is that in the binder or...

Q It is in the binder, sir.

THE COURT: What's the prefix?

MR. DINTZER: I apologize, Your Honor. UPX677.

1 THE COURT: I think that's in the second binder.

2 THE WITNESS: Thank you.

3 MR. DINTZER: And this is admitted, Your Honor.

4 THE WITNESS: Okay. Got it.

5 BY MR. DINTZER:

6 Q Okay.

7 And you'll see that 677 is an email from Apple to
8 Google.

9 Do you see that?

10 A I do.

11 Q 2007.

12 And it says, "Expressly here is our proposed
13 amendment to the contract, which allows end users the option
14 to choose their search default in Safari."

15 Do you see that?

16 A I do.

17 Q And the subject of the email is "Google Safari
18 Amendment."

19 Do you see that?

20 A I do.

21 Q Okay.

22 And then the attachment, which is the next
23 exhibit, is UPX678. And it says at the top, "Amendment 2 to
24 Information Service Agreement Between Google and Apple."

25 So this is a proposed amendment to the ISA.

1 Do you understand that?

2 A Yes.

3 And to the best of my knowledge, I don't have
4 direct knowledge of that, but it appears to be.

5 Q Okay.

6 You don't have any reason to doubt that, do you,
7 sir?

8 A No, it's just -- I couldn't authenticate the
9 document, so I'm just using it based on what I see.

10 Q Understood.

11 And if you go to the first entry here,
12 "Section 2.4 will be replaced in its entirety with the
13 following new Section 2.4., Selection of Default Web Search
14 Provider."

15 Do you see that?

16 A Yes.

17 Q On first launch or setup of the software, Apple,
18 in its sole discretion, may either make Google the default
19 web search provider appearing within the search box of the
20 software, or, or, provide a means for the user to choose the
21 default web search provider.

22 Do you see that?

23 A I do.

24 Q So this is the form in which Apple presented to
25 Google the proposal.

1 Do you see that?

2 A Just one second.

3 Okay, this is from Apple to Google. Okay.

4 Q Okay.

5 So we were making a list here.

6 And this one is a choice screen or a default if
7 Apple wanted -- Apple had the ability to choose.

8 Do you see that?

9 This is a different iteration. So it's choice or
10 default.

11 Do you see that in the agreement -- or in the
12 proposal, sir?

13 A I do.

14 Q Okay.

15 And you'll agree that looking at what both sides
16 sought in an agreement provides information about what
17 alternative contracts might have shown up had the contract
18 that ultimately resulted not been signed?

19 A I don't know if I would go so far this tells me
20 what might have shown up because what might have shown up,
21 according to economics is determined by both sides. What
22 somebody proposes might be more determined by one side.

23 So I might put something in there and say, well,
24 that would be good.

25 Like Apple, right here, is proposing this. And if

1 this is the only amendments, they're proposing it in a
2 context in which Google is paying on all the volume at the
3 same rev share that they used to pay. I would not expect
4 Google to accept this from an economist point of view
5 because they're getting something very different from what
6 they had contracted before -- for, and Apple is proposing to
7 change the terms without really it doesn't look like any
8 offsetting benefit on the other side. So I would not expect
9 this to show up in the agreement.

10 Q Okay.

11 But my question, sir, is: Looking at the
12 proposals and who was interested in what and why they wanted
13 it would be informative about not just why the contract
14 exists but would also be informative about what alternative
15 contract might have shown up had that contract not been
16 assigned?

17 A Yeah, I think the question of how they're likely
18 to show up would depend on, you have to look at the other
19 side's perspective, too.

20 Q But it would be informative, you agree?

21 A Could be to some extent.

22 Q No further questions on that document.

23 Now, Russian authorities ordered Google to adopt
24 choice screens for Android; is that right?

25 A That's my understanding. I don't know all the

1 details behind it, but, yes, that's my understanding.

2 Q You had a slide on it in your deck and you
3 discussed it, right?

4 A I did.

5 I just said it. I don't know everything that
6 launched behind it. I know it at that level.

7 Q Okay.

8 More people use the Yandex after the choice screen
9 than before?

10 A It certainly appears that way, yes.

11 Q And overall usage of the Yandex went up after the
12 introduction of the choice screen on most devices?

13 A That's correct.

14 Q And so we're going to go to UPX170 and this is
15 already admitted.

16 A Where is that in the folder?

17 Q That'll be in, I believe the first binder. And it
18 will be on your screen as well.

19 A Okay.

20 Q Okay.

21 And you'll see this is an internal email to -- at
22 Google, do you see that, dated December of 2019?

23 A I do.

24 Q And we're going to go to the attachment at Bates
25 number 977.

1 Well, first, let's do this cover. The Bates, the
2 attachment is an update of Android in Russia.

3 Do you see that, December 2019?

4 A Yes.

5 So this is December 2019. So this is well after
6 the choice screen was implemented.

7 Q Yes, sir.

8 And now we're going to go to page Bates number 977
9 of that.

10 A And that, I take it, is in the other binder.

11 Q No, no, no. It just continues on that same
12 document, just a little farther along?

13 A Oh, okay.

14 Q It's the last three digits of the Bates number are
15 977.

16 And the heading is "Both 28-day Actives."

17 Do you see that?

18 A Oh, I'm not there yet.

19 Q Okay.

20 And it's on the screen as well but you should look
21 at the documents since it has confidential information.

22 A Okay.

23 Q Okay.

24 And so -- and you understand that the Russian
25 remedy started late 2017, right?

1 A I don't remember the precise dates but that sounds
2 roughly right.

3 Q Okay.

4 And this chart, the one on the left, shows Android
5 actives and growth in Russia.

6 Do you see that?

7 A It's hard to see. It's pretty small, but I do,
8 I think.

9 Q Okay.

10 Can you see that through the 15 months shown in
11 that chart, I'm not going to say it exactly but I will say,
12 it's rising.

13 Do you see that?

14 "Actives [sic] and growth in Russia."

15 Android is growing in Russia during this time.

16 Do you see that?

17 A I do.

18 Q So Android is growing in Russia during this time
19 even without Google as the search default; is that right,
20 even with the choice screen?

21 A That seems to be true.

22 Q Okay.

23 And then if you go to 978, which is the next
24 document, the next page, I'm sorry, this shows Google's
25 search share in Russia declining. So Android is going up

1 but Google's search share is going down because of the
2 choice screen?

3 A I don't know if Android is going up because of the
4 choice screen. That's not so clear.

5 Q No. That's fair enough. Fair enough.

6 A I think some of the decline in Google is due to
7 the choice screen. There's other things going on in Russia
8 that complicates this a little bit, but, you know, I
9 certainly think the choice screen was part of the story why
10 Android was going -- I mean, Google's share was going down.

11 Q Okay.

12 At the same time that Android was growing?

13 A Right, but I don't know if one has anything to do
14 with the other.

15 Q And am I right you haven't analyzed the Russian
16 choice screen's impact on query volume in Russia;
17 is that right?

18 A Yeah, I think it would be hard to do but I have
19 not tried that.

20 Q So now we're going to go to your initial report.

21 MR. DINTZER: May I approach, Your Honor?

22 THE WITNESS: I need a bigger desk.

23 THE COURT: We don't usually have this many
24 binders.

25

1 BY MR. DINTZER:

2 Q So you'll see your initial report in this binder.

3 Do you see it?

4 A I haven't found it yet.

5 I see the title, yes.

6 Q Okay.

7 And we're going to go to paragraph 724.

8 A Okay.

9 Q Okay.

10 And it says -- and the heading is "The Economic
11 Analysis of Foreclosure."

12 Do you see that, right above 724?

13 A I do.

14 Q Okay.

15 And then we're going to go to paragraph 732.

16 And at the bottom of paragraph 732, you write
17 "Specifically, the extent of potential foreclosure should be
18 limited to the share of sales for which, one, rivals are
19 anti-competitively denied the ability to compete in the
20 actual world, and two, would be able to compete successfully
21 in the but-for world."

22 Do you see that?

23 A I do.

24 Q And that's your theory of how foreclosure should
25 be analyzed, right?

1 A Well, it's -- as long as we make sure we're --
2 it's about the ability to compete in the two worlds, not
3 necessarily about outcomes, who wins or loses.

4 Q Right. And I'm just reading the words, sir.

5 But that's what you wrote as your description of
6 foreclosure, right?

7 A And I think that's what I just made clear, because
8 I think one of the things that keeps happening is people
9 confuse the outcome in terms of shares with the ability to
10 compete which are two different things.

11 Q Right.

12 And there's no footnote for this one so you don't
13 cite anybody or any source for this paragraph, correct?

14 A No, because it's evident in the discussion of what
15 we're trying to assess. We're trying to assess competition.

16 Q And at your deposition, I drew your attention to
17 the fact you cited nothing for your -- this definition of
18 foreclosure. Do you remember that?

19 A I do.

20 Q And you didn't cite anything there either. You
21 couldn't recall anything or give me anything to cite;
22 is that right?

23 A I think it's the definition of foreclosure.

24 Q Okay.

25 And then on your slide, Slide 64 that you

1 presented to the Court, do you have that? We're going to
2 pull it up here anyway, but...

3 You repeat the same -- there we go.

4 You repeat the same -- in the lower part of this
5 slide, you repeat more or less the same test.

6 Do you see that?

7 A Yes.

8 Q Okay.

9 And, again, without citation, right?

10 A No, I didn't cite anything here.

11 Q Okay.

12 And so -- and my question to you, sir, is did you
13 create a but-for world that matches the second bullet on
14 your test there?

15 A I did not.

16 I evaluated whether competition was reduced in the
17 actual world by comparing it to a world without defaults,
18 and one of the worlds without defaults that seemed like a
19 reasonable proxy was the choice screen.

20 I don't think that's what would emerge under
21 competition but the nature of the allegation in this case is
22 that the challenged agreements limit competition by denying
23 rivals' access to users, and a choice screen would be a way
24 to say is that the cause of the reduction in competition,
25 which is moving to a world without choice -- without

1 defaults, a world where that access issue is eliminated.

2 Q Okay.

3 And I heard all that, but I want to focus on you
4 did not create a but-for world as you describe needs to be
5 done under your test, correct?

6 A I did not go all the way to a but-for world. But
7 my view of the world is the actual world is the but-for
8 world because they're not anti-competitive.

9 Q Okay.

10 So because of your conclusion that the challenged
11 terms are not anti-competitive, you didn't perform a but-for
12 world?

13 A I didn't perform a literal but-for world test, I
14 used a choice screen as a proxy for what a but-for world
15 absent the agreements -- absent the challenged agreements
16 would look like.

17 Q Okay.

18 So you are not offering a foreclosure number based
19 on the test you describe in Slide 64?

20 A I don't think there's any foreclosure so I would
21 say foreclosure is zero in this case. So I wouldn't offer a
22 foreclosure number.

23 Q Okay.

24 A Because if people are not denied the ability to
25 compete, there's no foreclosure.

1 Q But you didn't -- you reached the number without
2 performing the steps that you describe in Slide 64?

3 A I wouldn't characterize it that way, no.

4 Q Okay. Well, then I'm going to ask you for the
5 elements of your but-for world.

6 A Okay.

7 I'm saying it's a but-for world that does not have
8 the challenged agreements but in place, has a world in which
9 rivals have access to users directly, and a choice screen is
10 a proxy for that.

11 So it's a proxy for any -- measuring any potential
12 anti-competitive effects even though it's not something I
13 would say would arise under competition.

14 The reason I say it doesn't -- wouldn't arise
15 under competition is because what we have in the actual
16 world is preferable under competition.

17 But for purposes of your hypothesis, it seems is a
18 suitable test.

19 Q Sir, I'm just trying to figure out, if you have a
20 but-for world, I need the elements. If you don't have a
21 but-for world, then we need to absolutely lock down that
22 there's no but-for world so we can move on.

23 A No, it's -- you don't understand.

24 The reason I say it's not a but-for world is
25 because it would not emerge under competition, okay? That's

1 why I say it's not a but-for world.

2 But you've put forth a theory that says the actual
3 world restricts competition because it denies rival access.
4 So I'm going to get rid of what you claim generates the
5 anti-competitive effect in the actual world to say would --
6 does it, in fact, deny people access and anti-competitively
7 restrict competition.

8 Q Okay.

9 So I don't know what to call it since you're
10 saying it's not a but-for world, but in your not but-for
11 world, you assign choice screens for Android, right?

12 A I do, for Android and for Apple and for
13 independent browsers. In the assessment of whether the
14 challenged conduct is anti-competitive, that's what I do.

15 Q So this is not part of your foreclosure analysis,
16 this is part of your analysis to see if the conduct is
17 anti-competitive?

18 A Has it -- has it -- yes, whether it restricts --
19 whether it harms the competitive process.

20 Q And for that analysis, you included a choice
21 screen.

22 And you did your analysis how far back, how many
23 years back?

24 A I think you could apply that analysis as far back
25 as you want. I used data from the current period because

1 that's the period where we had data on the choice screen.

2 Q So let me be clear.

3 If, seven years ago, the choice screen had arisen,
4 you don't have data from seven years ago about this choice
5 screen but-for world; is that right?

6 A Well, we don't have direct evidence. We can use
7 evidence -- you know, I've never thrown a bowling ball off
8 the roof of my garage, but I'm pretty sure it's going to
9 obey the law of gravity.

10 Now, I'm not sure that a choice screen is that
11 robust in terms of how it works, but the basic economics is
12 going to be the same, and we know that over time, there's
13 been a strong preference for Google, there is today, there
14 was a strong preference for Google in 2014.

15 So, for example, if you look at Microsoft Windows.
16 Google's share on Microsoft Windows where the distribution
17 arrangements haven't changed has been 80 percent since 2011.
18 So one of the key things that you might think of would
19 affect the outcome of a choice screen would be, say,
20 Google's strength, and Google's strength has been -- at
21 least as measured by their share on Windows where they don't
22 have distribution, has been basically the same over 2011
23 to 2022.

24 Q Sir, could you just focus on my question.

25 My question was simply: You're using choice

1 screen data from the current period, not from data that
2 arose seven, eight, nine years ago, correct?

3 A Because we don't have any data from then.

4 Q Okay. So from the current period.

5 A But I just want to make clear why you would
6 use it.

7 You would use it because you're applying it to a
8 world that, in many of the relevant ways, is very similar to
9 what we have today, because one of the key contentions is,
10 the choice screen effect varies depending on how strong
11 people are.

12 And if you look at today, that picture is not very
13 different than it was, say, in 2014.

14 Q Have you seen any documents at Google or the OEMs
15 or Apple that says that in the alternative, if these -- if
16 these challenged terms were not in the agreements, that a
17 choice screen, as opposed to any one of these other
18 alternatives that we've talked about, that a choice screen
19 was the most likely alternative?

20 Are you citing any documents for that proposition?

21 A No, I'm not saying it's the most likely.

22 In some ways, it's the most extreme in the sense
23 of changing the access to one where everybody's presented
24 together, rather than having a default with other carve-outs
25 or something else.

1 So I viewed it as sort of, you're proposing
2 various alternatives that involve getting rid of some
3 elements to which the guy who has the default has a
4 distributional advantage.

5 I said, Well, one way to test that is let's go all
6 the way to a world where he has no distributional advantage
7 and see if that makes a difference. So that's the logic of
8 going to the choice screen, because the intermediate ones
9 won't, presumably, have intermediate effects.

10 Q So let's go to UPX134, and that's in your binder.
11 And that's admitted.

12 A The first binder?

13 Q It is, sir.

14 A And what's the number again?

15 Q 134, sir.

16 A Okay.

17 Q Okay.

18 And this is a 2011 email.

19 Do you see that, sir?

20 A I'm sorry, what's the number?

21 134, sorry, I'm on the wrong one.

22 Q Yes, sir.

23 A Okay.

24 Q Okay.

25 And did you read Mr. Barton's testimony?

1 A I probably read some of it. I don't think I
2 read -- I certainly didn't read it all.

3 Q Okay.

4 Do you remember that he testified about exclusive
5 agreements that he -- he negotiated?

6 A I don't have a recollection of that, no.

7 Q Okay.

8 So in his email on the first page, Mr. Barton
9 writes, on the third paragraph -- and the subject here is
10 "Platforms."

11 On the third paragraph he writes, "Without the
12 exclusivity, we are not getting anything. Without an
13 exclusive search deal, a large carrier can and will ship
14 alternatives to Google, as seen with Verizon, AT&T, and
15 América Móvil."

16 He continues, "Android is by far the greatest
17 opportunity for search monetization in mobile over the next
18 years and is very strategic to Google. You can bet that
19 Microsoft and Yahoo! will enter contracts for search on
20 Android through carrier deals if we do not."

21 Do you see that?

22 A I do.

23 Q Okay.

24 In 2011, Mr. Barton believed that if Google didn't
25 enter into exclusive agreements, that Microsoft and Yahoo!

1 would be able to get some of those contracts, right?

2 A I think he -- I think he's thinking about it --
3 now, I don't -- when he used the word "exclusivity," he's
4 not using it necessarily in any legal context or economic
5 context.

6 But he's sort of saying, If I don't do a
7 distribution deal where I'm, say, the default, somebody else
8 probably will.

9 Q Sir, he's using the word "exclusive."

10 A I agree, but you'd have to talk to him by what he
11 means by that.

12 But I think he means a world, for example, where
13 he's the default.

14 Q In your analysis, you don't have Microsoft or
15 Yahoo! getting a single, a single exclusive on Android;
16 is that right?

17 A I don't believe they would.

18 They're higher cost, lower quality. I don't think
19 there's anything in economics that would suggest that they
20 would win.

21 My -- you sort of missed the whole point of my
22 testimony, I guess.

23 My point is that they would compete and would
24 compete effectively, but at the end of the day, likely the
25 partner would choose the person who's got the best product

1 at the best deal.

2 But that doesn't mean they don't have the ability
3 to compete just because they don't win.

4 Q And so when he writes, "A large carrier can and
5 will ship alternatives to Google," you disagree with it?

6 A No.

7 He -- they can't -- this is disappointing because
8 the whole point is they have the option to do that, then
9 there's competition to see whether they'll do that or ship
10 with Google.

11 And my whole point is, there's going to be a
12 choice between which one they decide to do.

13 Q Right.

14 And -- and no --

15 A That's competition for the default.

16 Q Right.

17 Apple has option -- no further questions on that
18 document.

19 Apple has options regarding search, right?

20 A Well, you mean in terms of their promotion of
21 various search products.

22 Q Well, Apple could build its own search engine if
23 it wanted to?

24 A Yes, it could.

25 Q Or Apple could rely on a third party to provide

1 search, right?

2 A Yes.

3 Q And the ultimate basis of Apple's choice on
4 whether to enter is what is best for Apple, right?

5 A That's what economics would tell us.

6 Q And if Apple didn't get the deal they wanted from
7 Google in 2016, its next-best option would have been to
8 develop its own search engine, right?

9 A I'm not sure I'm positive about that, but that
10 would have been one way they could have gone, and I think
11 that's one way they talked about. But it's -- there's
12 pluses and minuses of doing that, so...

13 Q Okay.

14 If Apple entered search, they would get a
15 substantial share on their own devices, right?

16 A Well, it depends on how successful they were.

17 Apple has produced various products over the
18 years, and sometimes they don't get a substantial share, for
19 example.

20 Q Sir, if Apple entered search, you concluded that
21 they would get a substantial share on their own devices,
22 right?

23 A Presumably if they're successful at it.

24 And I presume they probably wouldn't try to enter
25 if they weren't going to be successful. I'm just pointing

1 out that Apple isn't always successful with its own
2 products.

3 Q Okay.

4 And in your not but-for world, the choice screen,
5 that doesn't have Apple entering the search market, right?
6 You don't model that?

7 A I don't, but that -- I consider that separately.
8 There's no -- the contracts don't exclude Apple's ability to
9 do that or preclude Apple's ability to do that.

10 Q You -- your -- if I can ask you to point in your
11 slides or your report, you do not model what would happen to
12 Google's share if Apple entered the search market, right?

13 A The point isn't if -- I don't --

14 Q I just need you to answer my question, sir.

15 A I didn't, because I didn't see why that would be a
16 relevant question here.

17 Q Okay.

18 One step Apple could take toward general search is
19 by expanding and monetizing Spotlight, correct?

20 THE COURT: Mr. Dintzer, I'm sorry.

21 Before he answers that question, I'm sorry, could
22 you go back to what he said a moment ago. I want to make
23 sure I understood.

24 Did I understand you to say that you don't believe
25 the Apple contract, Google's contract with Apple, prevents

1 Apple from developing its own search engine or search
2 functionality?

3 THE WITNESS: I think -- well, they can work on
4 developing it, and in many ways, they have been developing
5 various aspects of things that go into search. Although
6 only some aspects that they serve themselves through, say,
7 Safari suggests or through Spotlight and things like that, I
8 would imagine if they were going to enter search, they would
9 sign a different contract. They wouldn't have signed the
10 contract they did.

11 You know, it's more like, should I go with Google
12 and sign a contract with Google or I should go on my own.
13 I don't think they would sign the deal they signed with
14 Google and then immediately after that go into search on
15 their own. That seems much less likely.

16 If they were going to go, I would think they would
17 say, no, we're not going to go that deal with Google that we
18 do today. Maybe do a different deal. Maybe Google will
19 still have a bookmark but they're not going to -- we'll
20 place our search engine as the default, for example, would
21 be probably my expectation.

22 But that's not so much a question of what they can
23 do under the contract, but what alternative contract they
24 would have considered.

25 THE COURT: Got you. Thank you.

1 BY MR. DINTZER:

2 Q If Google's term with Apple did not restrict
3 Apple's ability to grow or move into the search market and
4 answer some or all of the queries that Apple gets, you
5 haven't modeled that, right?

6 A No, I haven't decide [phon.] on that specifically.

7 Although I'm not quite sure how that
8 facilitates -- how that helps the other search engines that
9 are out there today. That I don't understand. I don't
10 understand why they benefit from Apple entering because it
11 seems like that's another competitor that they have to deal
12 with. If I'm Yahoo! or Bing, Apple entering doesn't seem
13 like a way that's going to prevent me -- is going to improve
14 my lot relative to what it is today.

15 Q If Apple enters, you understand that consumers
16 would have another option, they have Apple as a general
17 search engine, right?

18 A They would have another option on Apple.

19 Q Okay.

20 A And Apple wouldn't consider that, right. That's
21 the big difference.

22 They're not going to have another option on
23 Windows or Android or one of the other ones. Apple
24 generally doesn't -- isn't going to go out and license that
25 software to somebody else. They're going to keep it on the

1 Apple platform so...

2 And that's an important point because --

3 Q What's the basis of that, sir? Apple tried to
4 make Safari work on Windows. Can you cite me a single
5 document that if Apple entered search, that they would not
6 move it on to other systems to make money?

7 A I wouldn't cite a document.

8 Apple Maps, you know, is Apple Maps or many of the
9 other Apple products. Apple has tons of products that are
10 on Apple that haven't been successful on other platforms.

11 Apple tends to design things for its own platform,
12 so I don't really believe that Apple search would be put
13 forth as an alternative for other platforms.

14 Q You agree that there are terms that affect Apple's
15 ability to show ads in Spotlight; is that right?

16 A Which agreements? I mean some of the -- some of
17 the agreements, they actually had the -- had an agreement to
18 serve Spotlight with Microsoft.

19 Q Sir, do you understand that the ISA prohibits
20 Apple from showing ads in Spotlight without giving Google
21 the right of first refusal?

22 A My own point is you say the ISA as if there's only
23 been one. I mean, there's actually --

24 Q How many ISAs have there been?

25 A Well, there have been different amendments over

1 time, and there was a time at which Apple actually served
2 Spotlight and, in Siri, through Microsoft.

3 Q The current ISA, sir, you understand that that
4 limits Apple's ability to serve ads in Spotlight, right?

5 A Well, there are restrictions there. But the fact
6 that they went with somebody else before illustrates the
7 flaw in your basic methodology, because you're saying if in
8 the current contract they can't do it, that means that it
9 was something Apple couldn't do if that's what they wanted
10 to do.

11 The fact that in a prior contract they actually
12 got the ability to give that business to Microsoft makes me
13 infer that there's no reason to believe that that had been
14 their desired direction, they couldn't have done that today.
15 So his interpretation is, oh, no that's off the table
16 because they have agreement with Google.

17 And there's no evidence that I know of that would
18 say if Apple wanted to do that and that was the best thing
19 for Apple, that they wouldn't have been able to continue to
20 do what they did in an earlier contract, and that's the
21 problem with --

22 Q Sir, you're --

23 A I'm trying to explain.

24 THE COURT: Hang on. Let's not talk over one
25 another.

1 Professor Murphy, I'll just ask you to focus on
2 the questions that are being asked and we'll be able to get
3 through this more quickly and you can always explain further
4 on redirect examination.

5 THE WITNESS: Sorry about that, again.

6 THE COURT: That's all right.

7 BY MR. DINTZER:

8 Q You were asked, You understand that the ISA limits
9 Apple's ability to serve ads in Spotlight, right?

10 A I'd have to go look at the contract again, but
11 I think this is the right of first refusal that Apple --
12 that Google has on serving of ads in those two.

13 Q Okay.

14 And it would -- the ISA would require Apple to let
15 Google supply those ads, right, as it is now written?

16 A I don't recall exactly what terms are there, but,
17 yes, there's a right of first refusal there for Google,
18 I'm just not positive what the elements of that right of
19 first refusal are.

20 Q If Apple had to let Google provide the ads, as
21 opposed to Apple doing it themselves, that would mean that
22 serving ads on Spotlight would be less -- could be less
23 valuable for Apple because they'd have to share the money
24 with Google, right?

25 A I mean, in theory, although they don't really have

1 a vibrant ad platform as far as I know.

2 Q If the limitation on Apple's ability to supply its
3 own ads on Spotlight, if that was lifted, then one of the
4 things that could happen could be that Apple could grow
5 Spotlight into a search engine?

6 A You'd have to actually talk to a search expert but
7 my understanding is Spotlight's a long ways from being a
8 search engine.

9 Q And your not but-for world only has choice screens
10 on Apple, that doesn't model the possibility that Apple
11 might enter search through Spotlight, you just don't model
12 it, right?

13 A For purposes of what I did, which was, I did not
14 model that because that wasn't important for what I was
15 doing.

16 Q Okay.

17 Now, Mr. Cue testified that if Google and Apple
18 couldn't reach agreement on revenue share, Apple would enter
19 search, right? As his --

20 A I don't remember it being quite that clear but
21 I think he sort of went down that direction.

22 But I know in the internal discussions they had at
23 Apple, there was always a back-and-forth whether this was
24 even a sensible path for them.

25 Q You didn't perform the analysis to see if a

1 revenue drop associated with the choice screen might be
2 enough to get Apple to enter search. You didn't do that
3 analysis, right?

4 A Now I'm really confused.

5 So we're going to put in a choice screen that's
6 going to reduce competition for defaults or eliminate
7 competition for defaults so Apple is going to get less
8 revenue, and that's going to enter -- cause them to enter
9 search. Is that pro-competitive?

10 Q Sir, you're asking me a question. I'm just asking
11 you what you did.

12 You've got a choice screen on Apple?

13 A Yes.

14 Q You did not model the possibility that if the
15 choice screen reduces Apple's take, they may enter search,
16 right?

17 A They may -- they may do that but, boy, I would
18 never think of that as a pro-competitive effect.

19 Q Okay.

20 I'm just trying to figure out what you did and
21 what you didn't do when you were -- in your not but-for
22 world.

23 When considering the competitive effect of a
24 contract, the agreement's history of negotiation is
25 important; is that right?

1 A It can be.

2 Q Okay.

3 And who proposed the contract term can explain the
4 competitive effects, correct?

5 A For those contract terms that are adopted in
6 particular. For those that are not adopted, not so much.

7 Q And a party's proposal shows what that party's
8 interests are, even if it doesn't make it into the
9 underlying contract, right?

10 A Yes, although that doesn't tell us that's
11 something that would likely make it into the final contract.

12 Q Okay.

13 And let's go to UPX2012, and that's probably in
14 your second binder.

15 MR. DINTZER: Your Honor, I believe -- we're going
16 to move to admit this one. This one is not in. This is an
17 email, a Google email, dated 2016.

18 And it contains an Apple term sheet attached.

19 THE COURT: All right. Any objection?

20 MR. SCHMIDTLEIN: No objection, Your Honor.

21 THE COURT: Okay. UPX2012 will be admitted.

22 (Plaintiffs Exhibit UPX2012
23 received into evidence.)

23 BY MR. DINTZER:

24 Q And if you see on the first page of 2012, you see
25 Mr. Walker. Do you know who he is?

1 A I don't remember the name, no.

2 Q Okay. I'll represent he's an attorney at Google.

3 Do you see that he's sending Bruce Sewell from
4 Apple a term sheet in 2016?

5 A Yeah, it looks that way.

6 Q Okay.

7 And he writes, "Per our discussion." And then
8 attached is the term sheet.

9 Do you see that?

10 A That seems to be what it says.

11 Q Okay.

12 And if you look at page 006, the first page of the
13 term sheet itself at the bottom, this is what Google is
14 proposing to Apple.

15 Do you see that at the bottom?

16 And I can't read what's in that box -- no, no it's
17 been resolved. I've got a sticky. I take it back. I can
18 read what's in the box.

19 Under key business terms, it says, "Apple will not
20 directly or indirectly take any action or make any omission
21 that adversely impacts the expected economic benefit to
22 Google."

23 Do you see that?

24 A I do.

25 I do know also that it doesn't make it in the

1 final deal.

2 Q Okay.

3 "E.g., branding, monetary value or other
4 components of the commercialization of the search
5 experience, including, without limit, limitation, by
6 editing, filtering, truncating, appending terms to or
7 otherwise modifying any search query originating from the
8 software, e.g., by using Apple's suggests algorithm in
9 connection with search queries or by altering UIs."

10 Do you see that?

11 A I do.

12 Q Okay.

13 In 2016, Google's proposal was to prevent Apple
14 from shifting queries from Google?

15 A That was one of their concerns.

16 I think this is where you'd really want to look at
17 the whole negotiation series, including what comes after,
18 but that was one concern Google had.

19 Q Their term sheet expressly seeks to stop Apple
20 from directing queries to Apple suggests, right?

21 A Well, this term sheet doesn't seek to do anything.
22 I think they're putting terms in there that would limit
23 about Apple's ability to do that.

24 Q Okay.

25 And the fact that Google's asking for that is

1 because that's a concern of theirs, right?

2 A There are.

3 And there's concerns on both sides.

4 In the final agreement -- this is a great example
5 of if you just look at all the pieces, you understand the
6 economics. But if you look at some of the pieces, you're
7 not.

8 Q Now, you're not offering, in your not but-for
9 world, what percentage of the market rivals would get if
10 they had exclusivity on iOS devices, right?

11 A I don't believe -- yes, because I don't believe
12 that would happen in the but-for world for the reasons I've
13 already articulated.

14 Q You believe that what percentage Google's rivals
15 would hold if they had the default on iOS would depend on
16 what Apple does, right?

17 A Yes, that would.

18 THE COURT: Sorry, can you repeat the question?

19 MR. DINTZER: Sure.

20 BY MR. DINTZER:

21 Q What percentage of Google's rivals would hold if
22 they had the default on iOS would depend on what Apple does?

23 A I would agree.

24 Q Given Apple's ability to control its environment,
25 a rival securing defaults on Safari would likely get more

1 than 20 percent?

2 A Assuming that Apple wanted to go in that
3 direction. I think they -- Apple has a fair amount of
4 control over their platforms so if they wanted to make a
5 more restrictive default, they -- they presumably would have
6 the ability to do that.

7 THE COURT: I'm sorry. When you say more than
8 20 percent, more than 20 percent relative to what?

9 MR. DINTZER: More than 20 percent of the market
10 share.

11 THE COURT: Oh, of market share.

12 MR. DINTZER: So -- no, that's fair. Let me
13 re-ask.

14 THE WITNESS: There's a context for the
15 20 percent.

16 THE COURT: Well, hang on. Let him clarify the
17 question in light of mine, and then we can move forward.

18 MR. DINTZER: No. I appreciate that, Your Honor.
19 Let me just make sure I've sharpened it to a point.

20 BY MR. DINTZER:

21 Q So given Apple's ability to control its
22 environment, a rival securing defaults on Safari would
23 likely get more than 20 percent of the search done on
24 Safari; is that right?

25 A I think that -- I think that's probably right

1 based on what we know, assuming the default is designed
2 similar to current defaults. This is what we think of the
3 share shift on the covered queries that would happen if you
4 shift defaults.

5 I think the market evidence would say, on Apple,
6 probably more than 20.

7 Q Did you read Mr. Parakhin's testimony?

8 A Mr. Parakhin is his name or --

9 THE COURT: Parakhin.

10 MR. DINTZER: I believe it's Parakhin.

11 THE WITNESS: Parakhin, sorry.

12 BY MR. DINTZER:

13 Q Did you read his testimony?

14 A I did. Not in its entirety.

15 Q Okay.

16 So we're going to put up a part of his testimony.
17 This is UPXD270, and we'll put it up on the screen.

18 And what he said was, he was asked:

19 "Question: It is the case that Microsoft told
20 Apple that it could invest more in mobile search but it
21 would not do so unless Apple gave it further distribution in
22 mobile?

23 "Answer: It is uneconomical for Microsoft right
24 now to invest more in mobile because even -- any -- like,
25 it's our belief that no amount of investment without

1 securing some way to do distribution in mobile will result
2 in any share gain. And so it is correct that unless
3 Microsoft gets a more significant or a firmer guarantee of
4 distribution, then it makes it uneconomical for Microsoft to
5 invest in mobile quality and in mobile search mode."

6 Do you see that?

7 A I do.

8 Q And you don't have any reason to doubt that?

9 A Well, I would say I'm not sure the market evidence
10 supports that, but if that's what he believes, I don't have
11 any doubt that he believes it.

12 Q Okay.

13 If Google didn't have the exclusivity provisions
14 that are being challenged, Microsoft would have a greater
15 incentive to invest in its search engine?

16 A That's not so clear.

17 Q You haven't modeled that?

18 A Well, I talked about that in my direct.

19 And first off, if you stay focused on Apple, which
20 is what we're talking about here, for example, or mobile,
21 there's a lot of volume that doesn't flow through the
22 default. So they can compete for that already.

23 Q You're not answering my question.

24 My question is: If the challenged terms were not
25 in the agreements, Microsoft would have an incentive to

1 increase its investment?

2 A Not necessarily.

3 Q Okay.

4 And you haven't modeled that? There's nowhere, if
5 I asked you -- if your report's in front of you, if I asked
6 you to point where you've done a regression analysis, some
7 sort of statistical analysis of Microsoft's investment in
8 the absence of these terms, you haven't done it?

9 A Well, I looked at -- I looked at Desktop, where
10 they have all the access and -- you could possibly have, and
11 they haven't made the investment there, which -- and I think
12 is very telling that it's not the lack of access that's
13 limiting their investment.

14 I mean, you can't argue they don't have access on
15 Desktop where they have all the preinstallation.

16 Q Sir --

17 A So under your theory of the world, they would find
18 an incentive to invest heavily in Desktop.

19 Q Sir, you understand that there's been testimony,
20 significant testimony, that almost all of the growth in
21 search over the past decade and longer has been in mobile,
22 right?

23 A Yeah, but Microsoft could go enormously on Desktop
24 just by taking share from Google.

25 Q And so Microsoft's investment in mobile would

1 increase if there were no exclusive terms like the ones
2 being challenged here?

3 A That's --

4 MR. SCHMIDTLEIN: Objection; asked and answered.

5 THE COURT: That's overruled.

6 He can answer the question.

7 BY MR. DINTZER:

8 Q Go ahead.

9 A I'm saying, the way to evaluate that statement is
10 to find empirical evidence of what they do when they have
11 access, and I have evidence on that from Desktop.

12 Q You haven't done an empirical analysis regarding
13 mobile, have you?

14 A I'm doing an analysis based on Desktop to inform
15 the but-for scenario you talk about for mobile, which is the
16 standard economic technique.

17 Q And -- and who do you think quality-wise is better
18 on Desktop?

19 A Google.

20 Q By a lot?

21 A It depends.

22 In terms of search result relevance, probably
23 they're pretty close.

24 But I would say as an economist, I would look a
25 lot at what people choose because what people choose is a

1 good indication of what people think is better, and Google
2 has, for the last 10 plus years, held about an 80 percent
3 share on Desktop, on Windows Desktop, even though they don't
4 have preinstallation.

5 Q Have you seen any of the testimony in this case
6 about Google and Bing being at parity or people even
7 referring Bing on Desktop?

8 That's a yes-or-no question.

9 A I've seen people talk about those things, but I
10 confess to be a hopeless economist and I look at market
11 outcomes as the primary indicator of preference,
12 particularly in a case like that where one can't argue its
13 distribution.

14 Q And so you just -- you ignored the testimony about
15 the quality parity?

16 THE COURT: Hang on. Hang on. Next question.
17 It's a little argumentative.

18 Go ahead.

19 MR. DINTZER: No, that's fine. I'll withdraw it,
20 Your Honor.

21 BY MR. DINTZER:

22 Q Now, you also don't model any of the possible
23 extra investment that Google would have to make if Bing got
24 better or started or had the chance to take market share in
25 the not but-for world where there are -- there's an absence

1 of these anti-competitive terms; you haven't modeled that?

2 A I have examined that, and I talked about that in
3 my direct testimony in terms of Google's incentive to invest
4 in a case with a default versus a choice screen.

5 So I did it using standard economic analysis that
6 says, There's no reason to believe that their incentives
7 would be higher under a choice screen and in many ways might
8 be lower.

9 Q You didn't do an econometric analysis.

10 I'm going to ask you to point to it. You did not
11 do an econometric analysis or regression analysis to show
12 causation that Apple would -- that Google would not increase
13 its investment, increase its spend in the absence of these
14 terms?

15 A I'm not sure of the data one would use to do that
16 econometric analysis, but I think the kind of analysis I did
17 is superior.

18 Q Now, Slide 40 in your deck, in your presentation,
19 if you turn there, please.

20 And it says, "Apple has incentives to support
21 competition."

22 Do you see that?

23 A I do.

24 Q If Apple's -- I'm sorry.

25 If the biggest threat to Google on search is

1 Apple's possible entry, then Apple doesn't have a need to
2 foster competition from Bing, right?

3 A No, it's -- I would completely disagree with that,
4 that -- because they can get pressure from both, and why was
5 one worth nothing just because you have the possibility of
6 the other. I don't understand the economic logic.

7 Q Well, you've seen Google's documents that say that
8 they're concerned about Apple entering search, right?

9 A I don't -- I'm not sure of -- there's some
10 documents that talk about Apple and search, yes.

11 Q Okay.

12 And Google's concerned about Apple entering
13 search?

14 A I certainly have seen documents that say something
15 along those lines, but I don't know if I would go to the
16 point of saying that's Google as a company's overall
17 concern. You can't infer one from the other.

18 Q Have you seen any Apple documents where Apple
19 makes decisions long term where they reference increasing
20 competition in search?

21 A I think there are.

22 I don't recall any right off the top of my head,
23 but I'm pretty sure there are.

24 Q Apple is a profit-maximizing firm, right?

25 A That would be my assumption as an economist.

1 Q That's supposed to be an easy --

2 A I can't give you a factual statement to that, but
3 as an economist, that's what I would say.

4 Q And maximizing profits can mean making decisions
5 that are sometimes worse for Apple's users?

6 A Well, I'm not -- yeah, they're not always aligned,
7 but they have a strong incentive to please their users since
8 that's where their bread is buttered, right.

9 Q Apple has made decisions that put its bottom line
10 ahead of its customers?

11 A Well, they're not necessarily in conflict, right;
12 that is, your bottom line typically aligns with your
13 customers. So maybe I'm doing something -- you know, the
14 effect it has on my customers is incorporated into how it
15 affects my bottom line, right, because if my customers don't
16 like it, that feeds into my bottom line directly.

17 Q You're familiar with the DOJ's 2010 lawsuit
18 against Apple and several book publishers, right?

19 A I am.

20 Q And you were Apple's economic expert in that case,
21 right?

22 A One of them.

23 Q And the District Court ruled against Apple, right?

24 A I believe they did.

25 Q It found that Apple violated federal antitrust

1 laws by conspiring to raise the price of e-Books, right?

2 A Well, yes.

3 Q Okay.

4 And we'll agree that raising retail price of
5 e-Books meant Apple's customers would pay more, right?

6 A Apple's customers would pay more but Apple's also
7 the seller there, so they would have an interest in prices
8 too; so...

9 Q That was worse for Apple's customers because their
10 prices went up?

11 A Well, there's some subtleties there.

12 But that element, presumably Apple's customers
13 would prefer lower prices. But they also might prefer more
14 availability so you've got to factor more things in than
15 that.

16 Q Raising e-Book price meant Apple would make more
17 money itself at the expense of its customers?

18 A I'd have to go back and go through all of it, but
19 I presume Apple's conduct reflected their interests.

20 Q Okay.

21 A And that's what I testified to.

22 Q "Their" being Apple's interests?

23 A Well -- but their interests also incorporate the
24 interests of their users, right, because how happy their
25 users are feed back on them.

1 Q Okay.

2 Sir, so, I mean, so I don't need to read from the
3 opinion but I will. "The Court found that Apple acted in a
4 way that was inconsistent with its customers' interests,"
5 right?

6 MR. SCHMIDTLEIN: Objection.

7 THE WITNESS: I --

8 THE COURT: Hang on.

9 THE WITNESS: -- I don't recall the specifics but
10 I'll take your word for it.

11 THE COURT: Professor Murphy, I just need to rule
12 on the objection before you answer.

13 I'll overrule the objection. But let's move on.
14 I can always read what somebody else's record --

15 MR. DINTZER: Fair enough, Your Honor. I'll just
16 cite the Court to the ninth page of the opinion.

17 BY MR. DINTZER:

18 Q Sir, you're familiar with Branch Metrics?

19 A I am.

20 Q Okay.

21 Branch Metrics allows people to find resources on
22 the device, right?

23 A Yes.

24 I'm not a computer science expert, but that's my
25 understanding of what it does.

1 Q And Branch satisfies a user interest through apps,
2 not just what's on the web, right?

3 A I'm sorry, could you repeat that?

4 Q Of course.

5 Branch satisfies user interests through apps and
6 not just what's on the web?

7 A I'm confused by the "not just what's on the web"
8 part because I thought you just said they do things that are
9 on the device.

10 Q Okay.

11 Well, do you understand that Branch uses apps to
12 find information for users?

13 A In some ways, you can use Branch; my understanding
14 is that works.

15 They also just use it to find apps and other
16 things on the device itself, not necessarily through the
17 apps.

18 Q And Branch and Google are search complements?

19 A There -- I wouldn't necessarily say they're search
20 complements.

21 They have many complementary features because
22 Google is largely searching the web and Branch is searching
23 on the device. And if you want to search both, they could
24 work together to do those two things.

25 Q And you don't know the limits placed on Branch's

1 technology by the RSA signatories, right?

2 A Yeah, my understanding is kind of complicated from
3 what I've been able to understand.

4 Q And you don't include Branch as a possible entrant
5 in your not but-for world, right?

6 A No.

7 Q You don't model them?

8 A That's not part of -- Branch is not part of the
9 but-for world I considered, no.

10 Q Okay.

11 So you don't, in any way, model the possibility
12 that Branch would enter search and become a competitor with
13 Google. That's not something that you considered or
14 modeled?

15 A Yeah, which year you want me to consider Branch
16 in?

17 Q I'm not asking you to do anything. I'm just
18 asking you what you did, sir.

19 A Okay.

20 No, that's not part.

21 Because I discuss Branch. It came up late in the
22 case. I discussed it somewhat. But it's not really a
23 search competitor, it's really a -- it does something
24 different. It's a non-device search.

25 Q You're not offering the opinion that Branch

1 couldn't enter into general search, you're not offering that
2 opinion?

3 A I don't see any evidence that they're likely to be
4 a general search competitor themselves. That's not what
5 they do.

6 Q Are you -- I just want to clarify, sir.

7 Are you offering an opinion about the likelihood
8 of Branch entering into the general search market if there
9 hadn't been restrictions that are being challenged in this
10 case?

11 A Okay.

12 When you say "enter," I need to understand what
13 you mean. You mean they're going to develop their own
14 independent general search product?

15 Q And move into search in a way that would compete
16 with Google, yes?

17 A As a general search provider?

18 Q In whatever way they would enter the market to
19 create economic pressure on Google, yes?

20 A Oh, so if they entered as a specialized search
21 provider, they would be in the market, is that what you're
22 saying?

23 Q Sir, you're asking me questions, and it really
24 works better the other way so that we can get you off the
25 stand as quickly and efficiently as possible, and I know you

1 appreciate efficiency.

2 So my question to you, sir, is: You have not
3 modeled, and you're not offering an opinion, about the
4 likelihood of Branch entering the search market in
5 competition with Google, correct?

6 A Which search market are you talking about, the
7 general search?

8 Q Have you done it for any?

9 A I don't -- I will give you my opinions.
10 The Branch may become, in some sense, a
11 specialized search provider. I have no reason to believe
12 they would enter as a general search provider.

13 Q And I'm not asking you what you have a reason to
14 believe or not, okay, so that's why I need you to focus on
15 my question.

16 THE COURT: Hang on. Hang on.

17 MR. SCHMIDTLEIN: Objection.

18 THE COURT: Hang on.

19 I think we know the answer. Let's move to the
20 next question.

21 BY MR. DINTZER:

22 Q Now, Branch got pushback from OEMs about
23 Google's -- about Branch's features.

24 Did you see that testimony?

25 A My understanding is that some OEMs thought there

1 wasn't a problem, other ones raised issues, but that's my
2 recollection.

3 Q So let's go to UPX1064.

4 A Which binder?

5 Q That will be in your second binder, sir.

6 A Second binder.

7 Q And let me know when you're there, sir.

8 A I'm here.

9 Q Okay.

10 And do you see -- have you seen this document,
11 sir?

12 A Most likely.

13 Q Okay.

14 MR. DINTZER: And this is admitted, Your Honor.

15 BY MR. DINTZER:

16 Q And the date is November 20th, 2018. This is from
17 Samsung.

18 Do you see that?

19 To -- it's a response to Branch. Branch wrote the
20 bottom and Samsung wrote the top.

21 A So this is from Mr. Kang at Samsung.

22 Q Okay.

23 And he writes, "Hello Colin and Rishi."

24 Do you see that?

25 A Yes.

1 Q He writes, "Thanks for putting this together and
2 yes, I do realize this is much better experience versus
3 driving users to app store without preview."

4 Then he writes, however, the gating factor here is
5 the Google-Samsung contract terms and anything that can be
6 claimed by Google as "web search" is something we need to
7 avoid.

8 Do you see that?

9 A I do.

10 Q Okay.

11 In a world without the challenged terms, that
12 would not be a gating factor for the Google-Samsung contract
13 terms?

14 MR. SCHMIDTLEIN: Objection.

15 BY MR. DINTZER:

16 Q I mean, for Samsung's relationship with Branch.

17 MR. SCHMIDTLEIN: He's asking to interpret a
18 contract he's never seen.

19 THE COURT: Well, I don't think that's the
20 question.

21 But go ahead, you can answer the question if you
22 know the answer.

23 THE WITNESS: Yeah, I mean, again, my
24 understanding based on the data that I've seen is that there
25 are disagreements about what these contracts say.

1 In the actual world, you'd also have to wonder
2 what contract would be there in the alternative. So I don't
3 think I could tell you one way or the other.

4 BY MR. DINTZER:

5 Q Okay.

6 No, that's fine. You just haven't modeled that as
7 part of the exercise, right?

8 A Yeah, I think we've covered that already.

9 Q Okay.

10 Now, in your analysis, you don't have DuckDuckGo
11 winning the default for private browsing mode on any
12 browser, right?

13 A I don't.

14 Q In your analysis, OEMs --

15 A But they're on a choice screen in my analysis.

16 Q You have a single choice screen. You don't have a
17 second choice screen for privacy, do you?

18 A I don't.

19 Q Okay.

20 And you don't have a default for privacy that
21 would go to someone like DuckDuckGo, do you?

22 A I don't know. It's hard to say. I don't --
23 there's --

24 Q You don't know?

25 A Well, I don't know if -- there doesn't have to be

1 a default, right? There could be something else like a
2 choice screen. So I don't specifically have a default, no.

3 Q And so you don't have in your but-for world a list
4 of -- okay, let's do the UPX -- we're going to pull up a
5 demonstrative.

6 MR. DINTZER: May I approach, Your Honor?

7 THE COURT: You may.

8 BY MR. DINTZER:

9 Q Okay.

10 So, in summary, sir, your -- I really don't know
11 what to call it, but your analysis doesn't show, doesn't
12 model Apple entering, Branch growing, Bing doesn't get any
13 exclusive.

14 I think we covered that, Bing doesn't get any
15 exclusives, right?

16 A No. Be careful, be careful.

17 I consider all those things and ask whether they
18 would happen in a but-for world.

19 So, for example, you say I don't talk about new
20 investment. I actually evaluate that directly.

21 Q But you don't --

22 A Using evidence from history about what actually
23 happened when people had more access or less access when
24 their scale went up or their scale didn't go up.

25 So I address many of these issues not in one piece

1 but I look and say, do I have a reason to think the
2 investment would go up. I had a whole section in my report
3 that, in my presentation yesterday, that had talked about
4 investment.

5 Q You don't actually model them, though, do you,
6 sir, as part of this exercise?

7 I understand you talked about it, it's all in
8 there, we don't have to go through it again.

9 You don't model them as part. You don't say,
10 well, this investment would have been this amount and this
11 growth of this entrant would be this amount and this
12 innovation, this different innovation would have been this
13 amount.

14 None of that takes place in your but-for world,
15 does it?

16 A That's simply untrue.

17 I had that whole discussion yesterday of whether
18 getting more share would lead to additional investment,
19 whether the change in access would lead to a different --
20 additional investment and I looked at the empirical evidence
21 and said there's no evidence that that would have happened.

22 Q You don't show a single new entrant into search in
23 the absence of the challenged agreements; is that right?

24 A I don't think that there would have been
25 additional entry, no.

1 Q Okay.

2 And so you didn't put it in, you don't model it,
3 you don't show it?

4 A No, that's a different question.

5 Like, if you don't think it's going to happen, you
6 didn't put it in.

7 It's a possibility it would be allowed in the
8 but-for world, but if it doesn't happen, then the way you
9 consider that is, since it's not going to happen, it doesn't
10 happen.

11 Q And -- no further questions on that document, sir.

12 Now, let's turn to Professor Whinston's 33 percent
13 analysis, okay?

14 And now, let's go to Slide 60.

15 Are you there, sir?

16 A I do.

17 Q Okay.

18 And you cite the use of -- oh, I'm sorry, 66,

19 I apologize.

20 There we go.

21 You talk about Apple Maps, and you -- about
22 Professor Whinston's reliance on Apple Maps.

23 Do you see that?

24 A I do.

25 Q Okay.

1 And so let me start talking about the 33 percent.

2 And one of the inputs is from Apple Maps, right?

3 A Yeah, that's a quite important input to that
4 number, yes.

5 Q Okay.

6 And now when Google offers rev share, it
7 calculates the incremental benefit from the defaults, right,
8 you've seen that in the documents?

9 A It calculates in calculations that they use to
10 help guide their decision-making, yes.

11 Q Okay.

12 And Google provided 30(b)(6) responses to a DOJ
13 request about whether Google has calculated clawbacks when
14 negotiating distribution agreements. And we're going to put
15 up a portion of that.

16 MR. SCHMIDTLEIN: Your Honor, I would ask that the
17 government provide Professor Murphy with the entire 30(b)(6)
18 response, because what they have done is they have excerpted
19 and left out material parts of the response for all of these
20 slides that they're about to show.

21 MR. DINTZER: It's in the binder, Your Honor.

22 THE COURT: Okay.

23 Where's the full --

24 MR. DINTZER: It's 6024 in the binder in front of
25 Professor Murphy.

1 THE WITNESS: That's -- Binder 2?

2 BY MR. DINTZER:

3 Q Yep.

4 If we could put up UPXD236.

5 We're on page 15, or Bates number 7441, of 6024.

6 It's also on the screen.

7 A Let me just read what's here.

8 Is there a specific part you want me to read?

9 Q Sure. If you look at the screen, that's the part.

10 A No, but I mean, in the document you pointed me to.

11 Q What's on the screen is on the document. That's
12 why -- your counsel asked me that I put the document in
13 front of you.

14 A So that's why I want to look at the document, not
15 just what's on the screen.

16 Q Well, but you're asking me, I'm telling you.
17 You're welcome to read the whole document. The part that
18 we're going to talk about is on the screen.

19 A Okay.

20 THE COURT: I think the question is where in the
21 document -- what portion of the --

22 MR. DINTZER: I'm sorry, Your Honor, page 15 at
23 the bottom.

24 THE COURT: All right. That's what I think he was
25 asking.

1 So page 15 at the bottom, Professor Murphy.

2 MR. DINTZER: Yes.

3 THE WITNESS: Okay.

4 So I think the -- okay, I see the other part, so
5 the clawback is discussed on page 5. And I think that's
6 referring to -- from page 15 back to page 5.

7 BY MR. DINTZER:

8 Q And my question -- you're welcome to read whatever
9 you want, but my question is actually pretty simple. If you
10 see on page 15, it says, "Google has not arrived at an
11 official best estimate of what the clawback rate would be
12 for any given device.

13 "Instead, in certain instances, Google personnel
14 have periodically referred to various historical data points
15 in connection with discussions regarding attempts to roughly
16 approximate potential future winback or clawback
17 assumptions, including, one, when Firefox shifted its
18 default search engine from Google to Yahoo! on browsers in
19 the United States, and, two, Apple's shift away from relying
20 upon Google Maps to Apple Maps on iOS."

21 Do you see that?

22 A I do.

23 Q Okay.

24 And my only question is, Professor Whinston's
25 33 percent analysis uses both of these identified methods,

1 right?

2 A Not for Apple.

3 Q Right.

4 It uses --

5 A He uses the higher number that Apple uses --

6 I mean, that Google has here, which is the Apple Maps, as
7 his lower end estimate. So that's his lower end estimate is
8 what comes out of Apple Maps.

9 Q And --

10 A And he uses an alternative estimate at the upper.

11 So he doesn't use these two for Apple. He
12 doesn't -- he doesn't look at all at Firefox for Ap- --
13 using the numbers for Apple.

14 Q Right.

15 But for the 33 percent -- you're just getting
16 ahead of me, sir, but for the 33 percent, he uses both of
17 these measures; is that right?

18 MR. SCHMIDTLEIN: And, Your Honor, I just want to
19 caution the witness that the percentage clawback rates that
20 are referenced --

21 THE WITNESS: Oh --

22 MR. SCHMIDTLEIN: -- are confidential.

23 MR. DINTZER: I'm not referencing them.

24 MR. SCHMIDTLEIN: But I understand --

25 THE WITNESS: Did I reference --

1 MR. SCHMIDTLEIN: -- but I want to caution the
2 witness.

3 THE WITNESS: I don't think I used any numbers
4 yet. I made that mistake yesterday. I'm not doing it again
5 today.

6 MR. SCHMIDTLEIN: Thank you, Your Honor.

7 THE WITNESS: Thanks for reminding me.

8 BY MR. DINTZER:

9 Q You understand that for Mac, for Desktop,
10 Professor Whinston uses the Firefox numbers, right, the
11 number one here, and that for mobile, he uses number two
12 here, the Google Maps?

13 A As his lower estimate.

14 Q Okay.

15 So Professor Whinston relies on two pieces of
16 material that Google employees themselves have relied upon?

17 A Well, we had this discussion yesterday. I'll
18 stand by my testimony from yesterday.

19 These are numbers they calculated. But given
20 these numbers and the actual negotiations, they didn't --
21 these -- the precision of these numbers was not something
22 they required.

23 Q And so let's go to UPX1050.

24 THE COURT: It's in the same binder.

25 THE WITNESS: Same binder. Thank you.

1 BY MR. DINTZER:

2 Q And this is an internal document, subject,
3 "Updated NYC Scenario Slides for Daniel."

4 Do you see that?

5 A I do.

6 Q And NYC means Apple. Do you understand that?

7 A Yes.

8 MR. DINTZER: And this is admitted, Your Honor.

9 BY MR. DINTZER:

10 Q And if we go to 886, that's Bates number 886 at
11 the bottom, we see a slide that we have seen routinely in
12 this litigation. Are you familiar with this page?

13 A Yes.

14 Q Okay.

15 And this page has both the Firefox and Apple Maps
16 information just as it's listed in the 30(b)(6) that we just
17 looked at, right?

18 A I don't -- I don't know if it's the same as in the
19 30(b)(6), but the same two events are being referenced.

20 Q Okay.

21 And Google concluded -- and we're not going to say
22 the number.

23 "Google concluded that it would keep" a certain
24 percentage "of the revenue it was previously earning through
25 the default"; is that right?

1 A Well, I don't know -- that's what the document
2 talks about in terms of numbers.

3 I think if we look back at the document, we saw on
4 their interrogatory response, they, I think, on page 5, said
5 these are not their estimates, they're estimates that people
6 at Google produced at various points in time. So I wouldn't
7 necessarily characterize Google as the company's estimates.

8 Q Right.

9 And so let's go to UPXD271.

10 Do you see the testimony of Mr. Roszak?

11 A I do.

12 Q And -- "Question: And this is a presentation
13 entitled 'What Would Apple Do,' dated January 2021.

14 "Do you see that?"

15 A I do.

16 Q "Answer: Yes.

17 "Question: And you see the recovery assumption
18 figures that your team provided here are the same from the
19 exchange we discussed a few minutes ago from 2016, correct?

20 "Yes."

21 So Google continued -- Google individuals, you
22 want to break them out from Google, continued to rely on
23 these numbers even until 2021, correct?

24 A They continued to use -- put these in their
25 documents for the discussions that they were going to have,

1 yes.

2 Q Okay.

3 And Professor Whinston --

4 A But they're not the same numbers
5 Professor Whinston uses, correct?

6 Q He relies on UPX1050, the Apple iOS and Firefox
7 screen we just saw, as part of an input for his 33 percent,
8 right?

9 A He doesn't use that for iOS, and it's important.
10 He used the high-end number for iOS as his low-end number,
11 and he didn't use what they -- what Google has as the
12 low-end number from Firefox at all.

13 Q Sir --

14 A So he took what was the high-end number from the
15 document and made it his low-end number and did not use what
16 was in the Google document as the low-end number.

17 Now, you could say, you know, he's free to do
18 whatever he wants, but -- and I don't think these are the
19 best source of information, but just recognize, he's using
20 what they put forward as the high-end number as his low-end
21 number.

22 Q Okay.

23 You didn't rely on this document at all and these
24 numbers at all?

25 A I think I referenced it for reference purposes,

1 but for my calculations, no.

2 Q Okay.

3 And so -- but Professor Whinston did. And I --
4 we -- you walked through your concerns, but
5 Professor Whinston did rely on UPX1050 as part of his
6 analysis, right?

7 A In the way I discussed.

8 Q Okay.

9 MR. DINTZER: And then let's go to UPX0116.
10 And this analysis was done by Microsoft in 2018.
11 This is admitted, Your Honor.

12 THE COURT: I think it's in the first binder.

13 THE WITNESS: The first binder?

14 BY MR. DINTZER:

15 Q Do you see that this is an email --

16 THE COURT: Hang on.

17 BY MR. DINTZER:

18 Q The cover is an email from --

19 THE COURT: Hold on a second.

20 THE WITNESS: I'm still looking for it.

21 THE COURT: 116. That's about this many tabs
22 through. It's about the tenth tab in.

23 THE WITNESS: Okay. Yep.

24 MR. DINTZER: Thank you, Your Honor.

25 THE WITNESS: They're in numerical order. They're

1 still, for some reason hard, to find.

2 I got it.

3 BY MR. DINTZER:

4 Q This is UPX116. This is an email dated
5 October 2018 from Microsoft to Apple.

6 Do you see that?

7 A I see that.

8 Q Okay.

9 And if we go -- and the second page says, "Baja
10 Financial Model."

11 Do you see that?

12 A I do.

13 Q This analysis was done by Microsoft in its 2018
14 negotiations with Apple.

15 Do you see that?

16 A I do.

17 Q Microsoft estimated how shares would shift if
18 Apple acquired Bing and set it as the Safari default?

19 A Yeah.

20 For purposes of their sales pitch, this is what
21 they did, yes.

22 Q Okay.

23 Let's go to page 20 -- Bates number .028 at the
24 bottom.

25 Let me know when you're there. The top.

1 A I am.

2 Q The heading is "U.S. User Retention Post Deal."

3 Do you see that?

4 A I do.

5 Q And Microsoft predicted, if you go down to
6 post-deal and the line "Safari Default."

7 Do you see that?

8 And then grand total, do you see that Microsoft
9 predicted that Bing's share of iPhone queries would go up
10 from 2 percent to a number I don't think I'm allowed to
11 read, post deal, but a significantly higher number.

12 Do you see that?

13 A I do.

14 Q Okay.

15 So this was Microsoft's estimate about what would
16 happen if it got the Safari default, right?

17 A It's their sales pitch, yes.

18 Q Right.

19 And at .032, Microsoft does the same thing with
20 respect to -- I'm sorry, .33, does the same analysis with
21 respect to Macs, and, again, I can't read the number, the
22 grand total post deal, but it is a significant increase on
23 Macs for Bing; is that right?

24 A I do.

25

1 Q Okay.

2 Professor Whinston relies on this document UPX116
3 in calculating his 33 percent, right?

4 A He does.

5 Q Okay.

6 You don't rely on this, right?

7 A Nope. I did not.

8 Q Okay.

9 And then finally, we'll go to UPX0095. Not to get
10 everybody's hopes up, I mean, finally on this subject.

11 This was an analysis done by Apple during --
12 so this is its internal analysis done by Apple during its
13 2016 negotiations with Microsoft.

14 Are you familiar with this document, sir?

15 A 009 what?

16 Q 0095?

17 A Oh, yeah, I see it now. Okay.

18 Okay.

19 Q Okay.

20 And you'll see the front, this is all redacted.
21 You'll see the front page is an email, is that right, sir?

22 A Yes.

23 Q From Apple to -- interior to Apple; is that right?

24 A It appears to be an internal Apple email, yes.

25 Q Okay.

1 And if we go to page Bates number 331 of this
2 document.

3 And this is Apple's -- and it says "Bing's
4 scenario." Do you see that heading?

5 A Yes.

6 Q And it says, "Capture rate established at"
7 percentage "of forecast Google Safari queries, (i.e., are
8 assuming" some numbers "would change default search to
9 Google or migrate to Chrome)."

10 So this is Apple's analysis of what the clawback
11 rate would be.

12 Do you see that?

13 A No, be careful. You've got to look back on
14 page 328. And I don't think I can read it because it's in
15 the box, but if you look at the top sentence in that box,
16 you can see where they're getting the assumptions from.

17 Q Sure.

18 A So whether I would characterize these as Apple's
19 would be somewhat up for debate, to say the least.

20 Q It is cited in an Apple document and sent to Apple
21 executives as the Bing scenario, correct?

22 A I agree, but they also included the part that
23 I just referenced that I can't read.

24 Q And, Professor Whinston cited this in his
25 testimony to the Court; is that right?

1 A He did.

2 Q And you didn't rely on this document either?

3 A No.

4 Q Okay.

5 MR. DINTZER: And with that, we're at a good
6 breaking point, Your Honor.

7 THE COURT: Okay.

8 All right. So why don't we -- it's a little bit
9 after 11:05 so why don't we just plan to resume at 11:20.
10 We'll see everybody shortly. Thank you.

11 COURTROOM DEPUTY: All rise. This Court stands in
12 recess.

13 (Recess from 11:07 a.m. to 11:26 a.m.)

14 COURTROOM DEPUTY: All rise. This Honorable Court
15 is again in session.

16 THE COURT: Thank you, everyone. Please be
17 seated.

18 MR. DINTZER: Thank you, Your Honor.

19 BY MR. DINTZER:

20 Q Now, sir, we talked about the inputs into the
21 33 percent on the Apple side. Google's -- and I'd like to
22 take us back to the 30(b)(6) and I'll put the slide up.
23 You're welcome to go back to 6 -- UPX6024 for the whole
24 thing. This is just another portion of that document which
25 we'll put the slide up.

1 Are you there, sir?

2 A I am.

3 Q Okay.

4 And it you'll see that the 30(b)(6) at page 16.
5 Let me know when you're there, sir.

6 A Okay. I'm there.

7 Q Okay.

8 It says, Google personnel have also previously
9 used clawback assumptions when analyzing various search
10 access points covered by the RSAs.

11 This is about Android.

12 Do you see that, sir?

13 A I do.

14 Q For instance, in analyzing provisions of the RSA
15 in 2020, Google personnel used clawback estimates of
16 between, blocked out, (based on Google's experience with
17 Apple Maps) to, blocked out, (based on Google's experience
18 on Microsoft's Edge browser) to assess revenue related to
19 default search on third-party browsers.

20 Do you see that?

21 A I do.

22 Q Okay.

23 Professor Whinston relied on these numbers for his
24 Android estimate; is that right?

25 A He did, but he didn't use them the same way Google

1 did in its documents that underlie this discussion.

2 Q Okay.

3 You don't rely on these numbers for your analysis,
4 correct?

5 A No, I wouldn't because I would rely on empirical
6 evidence.

7 Q Okay.

8 And so let's go to UPX323.

9 And this is in evidence, Your Honor.

10 And this is a -- please.

11 A This is not easy.

12 Q No. I understand. I apologize, sir.

13 A Okay.

14 Q And it's -- again, it's on the screen for
15 convenience.

16 This is a June 2017 email.

17 Do you see that?

18 A I do.

19 Q Okay.

20 And on the second page of it, Bates numbered
21 ending in 540, you have someone named Patrick Orr is sending
22 the following: The third paragraph roughly for SBrowser.

23 Do you see that?

24 A Okay.

25

1 Q Do you see that, sir?

2 "It says for SBrowser, we assume we can, number,
3 clawback based on the loss we saw from iOS Maps default
4 change, another number, and our current Google usage on Edge
5 browser."

6 Do you see that?

7 A I do.

8 Q And so they use that for the SBrowser estimate.

9 Do you see that?

10 A I do, but that's not help -- Professor Whinston
11 used it for more than that.

12 Q And -- well, he used it for third-party browsers,
13 right?

14 A No, he used these for Android in general.

15 Q I apologize.

16 A And Android in general is a mixture of mostly
17 actually Chrome, not the third-party SBrowser.

18 So the assumptions Google used for the Chrome,
19 which is a majority of the volume on Android, don't fall
20 under the assumptions that he used, even according to that
21 document.

22 Q Okay.

23 So let's go two paragraphs down, the line says,
24 "For Chrome, GSA without MADA protections, we assume the
25 same as SBrowser above."

1 Do you see that?

2 A He does.

3 Q Okay.

4 And just so we're clear, the numbers that we're
5 seeing in those boxes, those are clawback.

6 So the amount Google is estimating it would lose
7 is 100 percent minus those ones that aren't clawback, right?

8 A I agree. I agree.

9 Q Okay.

10 And you've seen no ordinary course Google
11 documents that are inconsistent with these numbers, right?

12 A I can't say that.

13 I'd have to go back and look. I know I've seen
14 these documents. And I know the underlying documents that
15 this references and they're a mess, I can tell you that.
16 They don't even do the arithmetic right.

17 Q But Google, however much you don't like them,
18 Google's employees do rely on them, right?

19 A I agree, but I'm not going to rely on something
20 they make arithmetic mistakes in.

21 Q Okay.

22 No further questions on that document, sir.

23 Now, let me try again.

24 Yahoo! got the default on Firefox in 2014;
25 is that right?

1 A I don't remember the exact date but it's right
2 around there, yep.

3 Q And in 2015 and 2016, Yahoo! was the default on
4 Firefox?

5 A Yeah, for that roughly that period of time, like
6 almost about three years, I think.

7 Q Okay.

8 And people still downloaded Yahoo!, right?

9 THE COURT: Downloaded Yahoo!?

10 MR. DINTZER: Thank you, Your Honor. I'll strike.

11 BY MR. DINTZER:

12 Q People continued to download Firefox;
13 is that right?

14 A I haven't specifically looked at downloads but
15 Firefox, they continued to use Firefox until -- I assume not
16 all of those were old users so they must have gotten some
17 downloads.

18 Q Okay.

19 And so those people who downloaded Firefox after
20 Yahoo! was the default search engine, at least some of them
21 did it because they wanted Yahoo!, right?

22 A I don't know if I could infer that at all.
23 How would I know that?

24 Q Okay.

25 And at least some of the people who downloaded

1 Firefox 2015, 2016, did it because they wanted Firefox and
2 they were indifferent as to the search engine?

3 A I would assume there are people who wanted Firefox
4 if they downloaded Firefox, yes.

5 Q Okay.

6 And the fact that Yahoo! was preloaded as the
7 default, that didn't keep those people from downloading
8 Firefox, right?

9 A Well, they -- it probably affected it. But
10 I don't know -- it didn't keep some people from doing it,
11 sure.

12 Q You don't know what percent of people downloading
13 a third-party browser do it specifically to access the
14 default search engine in that browser?

15 A I think it would depend on the combination of
16 browser and search engine.

17 If I have a very good browser, people might
18 download it and then change the search engine.

19 If I have a browser that has a very good search
20 engine, you might think that's more the driver. So it would
21 vary across pairs.

22 Q And you haven't done that analysis for any of the
23 specific browsers or search engines in this case?

24 A I don't think I did it directly.

25 I think we -- the evidence I put forward on

1 Google's usage on Windows and the downloads of Chrome seems
2 to say the search engine's an important part of it.

3 Q But if I asked you for an econometric regression
4 analysis, anything like that, you haven't actually looked at
5 the causation of what people were looking for when they
6 downloaded Chrome, right?

7 A Well, if you just ran the regression, which
8 I wouldn't recommend, you'd -- you'd get the search engines
9 like 100 percent, but I didn't do that.

10 Q Okay.

11 A Because I didn't want -- I didn't think that was
12 more informative. I thought what I did was very
13 informative.

14 Q You discussed Mozilla's 2014 decision to change
15 the default in Yahoo!, right?

16 A I did.

17 Q And Yahoo!'s executives did that to encourage
18 competition in search, right?

19 A They had a bunch of reasons. That's one of them.

20 Q And if we can go to UPX315.

21 A 0315?

22 Q Yes, sir.

23 And just let me know when you're there, sir.

24 A Sorry, my navigational skills leave something to
25 be desired.

1 There we go.

2 Q Do you see that this is an email from a Mozilla
3 employee dated November 2014?

4 A Okay.

5 Q And the document attached, the slide that goes
6 "Strategic Development Search Negotiations"?

7 A I do.

8 Q Are you familiar with this document?

9 A It looks -- yes, I've seen this document before.

10 Q Okay.

11 And so --

12 A Well, at least a version of this document.

13 I don't know if it's this exact version, but I've seen a
14 version of this.

15 Q Fair enough.

16 And so there's a series of slides. "Why Google,"
17 "Why Not Google," "Why Yahoo!" and "Why Not Yahoo!."

18 Do you see that?

19 A I do.

20 Q And for the "Why Not Google," under "Mission
21 Alignment," this is .005, it says, "Does not promote
22 competition for search, supports the continued dominance of
23 Google, and dependency on Google."

24 Those were reasons why they -- why Mozilla
25 presumably might not want to go with Google.

1 Do you see that?

2 A Yes.

3 And the other ones, too.

4 Q I'm sorry?

5 A There were other reasons too, but that's the
6 mission alignment part.

7 Q Yes.

8 So, I mean, financial security, there was no
9 revenue guaranteed. They go on other -- on other reasons
10 why not to go with Google; is that right?

11 A Yeah, that's -- they have the list here.

12 There's a bigger discussion, I think, somewhere
13 else in here, but, yeah, these are the summaries.

14 Q Okay.

15 And then "Why Yahoo!," which is on the next page
16 under "Mission Alignment," "An agent for change,
17 independence from Google, opportunity to level the playing
18 field in search."

19 Do you see that?

20 A Yes.

21 Q Mozilla's executives looked for the change in
22 defaults; one of the reasons was because they were oppressed
23 by Google, right?

24 A You'd have to ask them if they felt oppressed,
25 but, yeah, one of the reasons is they were interested in the

1 opportunities they thought they could get through Yahoo!
2 that they weren't getting through Google.

3 Q Now, after Mozilla changed the default search to
4 Yahoo!, Google's queries on Firefox dropped by 20 percent?

5 A Yeah, roughly.

6 Q And Yahoo!'s share on Firefox went up when it got
7 the default?

8 A Yeah, because you kind of -- that's how shares
9 tend to work.

10 Q Okay.

11 Yahoo!'s share on Firefox then fell precipitously
12 when it lost the default?

13 A Yeah, it -- it fell before then, but yeah, it fell
14 again when it lost the default.

15 Q Gaining or losing the Firefox default shifted
16 millions of queries for Yahoo! and Google.

17 A That's what we'd expect when you shift the default
18 from one to the other. That's what I talked about
19 extensively yesterday, yes.

20 Q Right, those users shifted with -- some users
21 shifted with the defaults?

22 A Yeah. A lot of them didn't, but some of them did.

23 Q Okay.

24 Now, Firefox is almost entirely for Desktop,
25 right?

1 A At this -- yes, it's -- you know, it's been -- it
2 got popular when Desktop was most of the world, and they've
3 kind of remained largely a Desktop browser.

4 MR. DINTZER: So let's go to UPXD227.

5 May I approach, Your Honor?

6 THE COURT: Okay.

7 BY MR. DINTZER:

8 Q Do you recognize this, sir? This is from your
9 report?

10 A Yes.

11 Q Okay.

12 And this your graph showing U.S. browser market
13 shares for computers from January 2009 to December of 2021;
14 is that right?

15 A Yes, desktop computers.

16 Q Desktop computers. Thank you, sir.

17 And Firefox is the yellow line; is that right?

18 A Yes.

19 Q And Firefox's trajectory from about November 2009
20 to the end of the graph on the right, the entire time, it is
21 descending, right? I mean, it bumps up and down, but the
22 overall -- the bigger thing is a general downward decline,
23 is that right?

24 A Yeah, it's generally heading -- it's generally
25 heading down, although, you know, it has periods where it

1 goes up and down, but yeah, if you had to think about a
2 trend, the trend is definitely down.

3 Q And there's no detectable increase in the pace of
4 the decline starting in November of 2014 when Firefox
5 switched to Yahoo!?

6 A Yeah, it's really hard to tell.

7 It's -- I tried to look at that. It -- the
8 problem is their share is getting lower, so the decline
9 probably is going to slow no matter what because they're not
10 going to go below zero, right?

11 So I couldn't figure -- it wasn't a good way to do
12 that. I tried to look at that actually, and, you know, it's
13 really hard to know what you would have expected but-for, so
14 I wasn't able to do anything with that.

15 Q Right.

16 Well, you put it in your report, sir. And so
17 there's no detectable reversal in the decline of Firefox
18 when Mozilla switched back to Google in 2017; is that right?

19 A Well, this is the problem, right?

20 If you just did a comparison of the slopes, it
21 actually does flatten, right? It's going down, and then it
22 flattens.

23 I didn't want to cite to that because, kind of as
24 you're getting close to zero, it's going to naturally
25 flatten. You could take that as evidence that it, going

1 back to Google, slowed the decline, but it's hard to tell
2 that from -- going back to Google, didn't have much of an
3 effect, but decline has to slow as your share gets smaller.
4 You can't keep falling at the same pace because you can't go
5 below zero.

6 So the evidence would actually say it did slow if
7 you just looked at slopes, but that was something I didn't
8 think was informative because of this confounding factor.

9 Q And you didn't do any other deeper analysis,
10 regression, or econometric?

11 A Well, I think what I just said is beyond what you
12 do with an aggression, right? You actually look at a spline
13 regression across that period, and you do see it flattens.
14 But I wasn't going to attribute that flattening to going
15 back to Google for the reason I just said.

16 So I actually did look at it econometrically.
17 I just concluded that the econometrics had a potential
18 confound that I didn't put that forward.

19 Q Okay.

20 And so moving on from Mozilla and Firefox, I'm
21 going to turn to the issue of scale, users issued different
22 queries on Mobile than Desktop; is that right?

23 A Yeah, there's a -- there's a fair amount of
24 overlap, but there's a different distribution of Desktop and
25 Mobile queries, yes.

1 Q Mobile has more location-based queries, right?

2 A Well, you mean like that are --

3 Q Coffee near me.

4 A Yeah, something like that.

5 Now, some of that might be autocomplete issues,
6 but yeah, there's more near me queries.

7 Q And more general location-based queries on our
8 phones than on our desktop computers, right?

9 A Yeah, I just want to make sure, I mean, your
10 location is always part of what kind of is there, but the
11 ones that are -- the location is more important often would
12 be more likely to be on a mobile device.

13 Q Okay.

14 The percent of overlap between mobile and desktop
15 will be different for Bing and for Google, right?

16 A Yeah, partly just because they have different
17 relative sizes.

18 Q Well, and also they have different distribution of
19 where they get more queries from, right?

20 A Yeah, but even if the distributions and queries
21 were the same for the both of them and -- that's what's the
22 problem with Professor Whinston's statistics he put forward,
23 confounds a whole bunch of different factors together.

24 Q The overlap between mobile and desktop would be
25 different for Bing and Google because they have different

1 distributions across desktop and mobile, right?

2 A When you say "different distributions," what do
3 you mean? Just different shares?

4 Q The percentage of the queries that Bing gets is
5 higher on desktop than the percentage of queries that Google
6 gets for desktop?

7 A Yes. That -- that's what I'm talking about is
8 just a pure relative scale difference, as opposed to the
9 distributions of queries being different on the two.

10 Q I'm not sure I get the answer so let me try this
11 again.

12 The percentage of queries, the Venn diagram that
13 are both Desktop and Mobile, will be different between
14 Google and Bing because of the nature of where they get
15 their queries from, right?

16 A True. Even if the distributions on Mobile and
17 Desktop were the same, that would be true.

18 Q Right.

19 Now, scale is only one -- I'm sorry, let me try
20 that again.

21 Scale is one factor that affects a general search
22 engine's ability to improve its quality?

23 A I think that's -- you know, I'm not a search
24 expert, but that's what it seems to be.

25 Q And you don't deny that click-and-query data has

1 some value for improving quality?

2 A No.

3 Q And you're not offering an opinion about when
4 click-and-query data is valuable and when it's -- when
5 there's diminishing returns?

6 A Well, I think -- I would think as an economist,
7 there's pretty much always diminishing returns, but that
8 doesn't mean they're not valuable even after some
9 diminishing returns have set in.

10 Q In fact, diminishing returns are consistent with
11 the click query data being valuable?

12 A Yes. Well, I think that's what I just said.

13 Q I think so. I want to make sure we're aligned
14 because when we get along, then that makes it all easier.

15 Diminishing returns just says that as I get more
16 data, the value of additional data declines some amount,
17 right?

18 A Yeah, there's some statistical properties that
19 might help with that.

20 Q Maintaining data has some cost?

21 A One would presume.

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

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

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

3 MR. SCHMIDTLEIN: Objection, Your Honor.

4 THE COURT: Hang on. He can answer it from a
5 perspective of his economic view.

6 THE WITNESS: There would be some -- they would
7 have to play some value. Maybe they're required to maintain
8 it for some reason or something else.

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

11 BY MR. DINTZER:

12 Q Okay.

13 And let's go to Slide 37 in your deck.

14 And it's redacted here so...

15 A Is my deck in this binder?

16 Q The deck should be in a --

17 A I got my deck from yesterday.

18 Q Yes, I'm sorry, you are overbindered and I
19 apologize.

20 A All right. 37, you said?

21 Q Yes, sir.

22 A Okay.

23 Q Okay.

24 I just want to confirm, sir, you can't assign a
25 percentage of the overall growth in mobile search, starting

1 from 2010 to the present, that can be attributed to Google's
2 inputs as opposed to just the growth of the mobile market
3 for other reasons, right?

4 A I have no idea what that has to do with Slide 37.

5 Q Well, maybe I misunderstood Slide 37.

6 So let's -- did I give the number wrong?

7 So let's go to Slide 138.

8 So let me ask my question again.

9 You can't assign a percentage of the overall
10 growth in mobile search from 2010 to the present attributed
11 to Google's input as opposed to just the growth of mobile;
12 is that right?

13 A When you say their input, you mean their efforts
14 to improve things or stuff like that?

15 Q Sure.

16 A I don't think, as I testified yesterday,
17 I couldn't give you a precise percentage for that, no.

18 Q Okay.

19 But even an imprecise percentage, you haven't done
20 the -- you haven't done an analysis of what percentage is
21 owed to Google, right?

22 A No. We know that, you know, the economics tells
23 us, for example, a lot of this is growth in mobile and they
24 did a lot to facilitate growth in mobile. But I can't give
25 you a quantitative assessment of that.

1 Q Sure.

2 Let's see.

3 Okay. So no further questions on that document.

4 Now, and I think you hit this in your direct.

5 Since most users don't pay a fee to use search
6 engines, users tend to choose among search engines that
7 offer based on quality, quality becomes a significant
8 importance for the users, right?

9 A I would assume that's right, yes.

10 Q And for search engine quality, that includes the
11 relevance of the results, the layout of the page, and
12 latency?

13 A Yeah, among -- I don't know, a bunch of other
14 factors, features and other things that those have, yeah.
15 There's a bunch of factors that determine it. I think
16 that's generally how consumers decide.

17 Q And entry into a mobile -- let me try that again.

18 Entry into a monopolized market will increase
19 quality across some of the dimensions, right?

20 A Well, economics isn't actually as clear on that
21 as -- you can say, it will often affect the mix of things
22 because if you're the only producer, typically you compete
23 against outside.

24 Inside the market is someone sometimes compete on
25 different dimensions because if you're competing things

1 outside, you do things that kind of appeal to people on that
2 margin.

3 When you're on the inside, you tend to do more
4 things that appeal to people between you and, say, a rival.
5 So it kind of switches your focus somewhat.

6 Q So let me make sure I've got the answer.

7 Entry into a monopolized market will increase
8 quality across some dimensions?

9 A As a very general statement, I'm not sure you
10 could make that.

11 I think some dimensions may rise.

12 You have to look at the circumstance and what that
13 entry does and how it changes the marketplace.

14 Economic -- I think I can give you a better
15 answer, which is, economics, when it comes to, like, pure
16 quality, doesn't really have much of a prediction what
17 happens when you switch from monopoly to competition. It's
18 kind of surprising, but it doesn't.

19 The basic answer is, if you could make it better
20 and make it better by an amount that exceeds -- like, say,
21 I can make it worth a dollar more and it costs me 90 cents
22 to do it, you'd want to do that whether you're a monopolist
23 or whether you're in competition.

24 Because if you're a monopolist, you could raise
25 the price by the 90 cents' worth of cost and sell more.

1 That would be beneficial to you. If you're a competitive
2 firm, you would do the same.

3 On the other hand, if you -- raising the value by
4 a dollar, costs you a dollar 20, you wouldn't do it as a
5 monopolist and you wouldn't do it as a competitive firm
6 either.

7 So the question is, is the value to consumers of
8 what I'm adding bigger or less than it costs me to give it
9 in both cases.

10 Q Well, sir, you're -- let me just make it simple.

11 You don't believe that entry into a monopolized
12 market would increase quality, right?

13 A I said you have to look at the market.

14 But economics, like as a general matter, doesn't
15 give you that prediction. Which, once you tell me the
16 economics doesn't give you that prediction across the board,
17 you have to look at the situation, because the simple story
18 I just gave kind of tells you why economics doesn't tell you
19 one way or the other.

20 Q So privacy is one dimension of quality that users
21 consider, right?

22 A I would assume so, yeah.

23 Q When a user chooses a general search engine, they
24 may make the choice based on which one provides the best
25 privacy, right?

1 A For some users, yes.

2 Q And people use DuckDuckGo for its privacy policy,
3 right?

4 A That -- I haven't interviewed the people but
5 I assume the people that use DuckDuckGo, that's an important
6 feature for them.

7 Q DuckDuckGo appeals to users for particular
8 searches because they offer privacy?

9 A That's a good presumption based on what we know
10 about the marketplace, yes.

11 Q And for certain searches, other search engines are
12 short on privacy in the way that DuckDuckGo is offering
13 privacy, right?

14 A At least from those users' perspective, I assume
15 that's why they choose them.

16 Q Have you ever tried to change a privacy setting on
17 Google search?

18 A Yes.

19 Q How many steps did it take?

20 A I don't remember.

21 I was able to do it. I don't remember how long
22 it -- how hard it was.

23 Q Okay.

24 Now, in your report, you say that Google is
25 willing to pay partners only to the extent that partners

1 provide promotion that is expected to generate incremental
2 search usage in revenues, right?

3 A That's in cases where they're paying for
4 promotion.

5 They might pay private -- they might pay partners
6 for other reasons like make -- doing updates or something
7 else.

8 That's -- but if we're just focused on the
9 promotion part, yes, they're going to value it based on the
10 incremental business they get.

11 Q Google's willingness to be the default depends on
12 the incremental query volume associated with being the
13 default?

14 A I would think that would be true to some -- along
15 with other factors, but that would be an important factor.

16 Q And paying partners, even if they do not deliver
17 incremental search volume, would not be rational business
18 conduct?

19 A I would say that's right, as long as there's no
20 other aspect.

21 Q Right.

22 A I just want to make sure: You could pay people
23 for other things but you wouldn't be paying for incremental
24 volume if you didn't get incremental volume, right. It's
25 kind of self-evident.

1 Q And it would also not be rational business conduct
2 for Google to pay more than the revenue it gets from
3 incremental search, right? So if it's paying X percentage,
4 it concludes that that incremental search is worth that
5 percentage or more?

6 A Assuming there are no other benefits.

7 Q So if Google is behaving rationally when it pays
8 Apple, and I know this percentage was given out yesterday
9 and has now been published, I don't know if the Court --

10 A Let's not --

11 Q I don't need to say it.

12 THE COURT: You don't need to say it.

13 BY MR. DINTZER:

14 Q Assuming -- so if Google is behaving rationally
15 when it pays Apple X percent revenue share, it must believe
16 that its incremental revenues from the default are at least
17 X percent of its Safari revenues, right?

18 A No, not necessarily, for the reasons I just said.
19 Depends on if there's other sources of value they get, like
20 if that incentivizes further growth that would otherwise not
21 occur or there's a value in getting the endorsement of
22 Apple, you know, for your product more broadly.

23 So there are other reasons why, so that wouldn't
24 be -- you can't make a strict statement about that, no.

25 Q You haven't broken those numbers out?

1 A No.

2 I'm just -- you said you could make an inference.
3 I'm saying you can't make that inference.

4 Q And have you seen any Google documents that break
5 those numbers out?

6 A No, I wouldn't expect them to.

7 Q Okay.

8 Let's go to UPXD223.

9 And this is testimony by Ms. Porat.

10 Did you read or see the video for Ms. Porat?

11 A I don't remember this specific statement, no.

12 Q And she was asked this question: "Would it be
13 fair to say that the value of the acquired traffic that
14 Google gets from the TAC payments exceeds the cost of the
15 payments that Google makes?"

16 "Answer: Yes."

17 "Question: Otherwise, you wouldn't make the
18 payments, right?"

19 "Answer: Correct."

20 You don't disagree with that?

21 A No. I -- that's her view, yes.

22 Q Okay.

23 And she's the CFO as it says on the slide?

24 A Yeah, I don't know how -- how intimately she's
25 involved in all the underlying things. But, yeah, that was

1 what she said, so that's what she said.

2 Q No further questions on that slide.

3 Even without the MADA and the RSA, OEMs would have
4 an incentive to ensure that users have a positive experience
5 on their devices, right?

6 A Yeah, I would think so.

7 Q Sure. Right. Because they want to sell their
8 devices.

9 So they want to make sure, even if there was no
10 MADA and no RSA, they'd want to make sure that their devices
11 had quality so that they could sell them?

12 A Yeah.

13 I mean, I assume their objective to having a
14 better device is the same whether, really, you'd had that or
15 not. That objective is not what changes.

16 Q OEMs and carriers have their own marketing
17 incentives separate from Google's payments, to make sure
18 that the devices work well?

19 A Yeah, there's a little more nuance to that.

20 They want to ensure that their devices work well.
21 It's not sure, for example, that they would have the
22 incentives to make sure the Android platform as a whole
23 works well, right, which is one of the problems that was
24 there at the beginning. So that divergence of an incentive
25 is actually important in the history here.

1 Q Well, OEMs and carriers have their own marketing
2 incentives to perform security upgrades?

3 A We talked about this yesterday. They have some,
4 but not the same incentives that you would have for the
5 platform as a whole.

6 Q And OEMs and carriers have their own market
7 incentives to preload the Google Search widget if that -- if
8 they believed that would benefit their customers?

9 A Well, that's not independent of how much
10 somebody's willing to pay them to do that, right? They have
11 two reasons; one, to serve their customers; one, because
12 that's valuable promotion that they would like to
13 contract for.

14 Q Right.

15 But separating out the money that they're paid or
16 the benefits that they give for loading the search widget,
17 if the OEMs and carriers, separate from the money, believe
18 that putting the search widget on their devices was a
19 benefit to their customers, they would do it anyway, or
20 they'd want -- they'd at least seek to do it anyway?

21 A Well, you've got to be careful. It depends. Are
22 they getting payments for other people for other's
23 promotion?

24 Q So I'm separating out the payment for the
25 promotion.

1 My question is simply, they would want to put a
2 search widget on their device if they believed that their
3 customers wanted that, right?

4 A Well, it -- it depends on what the other things
5 going on on that device are, right?

6 You can't just make an independent statement about
7 that.

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

10 A Well, in terms of what they get for the RSAs,
11 I'm not sure I recall any exclusive defaults.

12 They have preinstallation exclusivity under most
13 of the RSAs we've seen.

14 Q Okay.

15 A It's preinstallation exclusivity, right?

16 Q Right.

17 A That is, they're the only preinstalled search.
18 Doesn't mean they have an exclusive on search on that
19 device.

20 So -- okay.

21 Q They have the exclusive on that device out of the
22 box; can we agree on that?

23 A That's preinstallation exclusivity. That's the
24 term I think we've been using.

25 Q So what are the benefits?

1 A Well, I think they get more search volume. As
2 part of the RSA -- those payments also facilitate growth of
3 the Android platform.

4 They incentivize more search on those devices;
5 incentivize higher quality devices, they incentivize
6 upgrades in various quality features.

7 Q Anything else?

8 A Those are the ones that come to mind. There might
9 be more, but those --

10 Q That's all --

11 A That's not a bad list. It's got five on it.

12 Q No.

13 So -- now, Google could sign a separate agreement
14 to force upgrades, right? We've had testimony about that.

15 A They could.

16 Q Okay.

17 So that would be one way, that could be taken out
18 of the RSA and it could just be done in another agreement,
19 right?

20 A Are you saying you could pay rev share for the
21 upgrade?

22 Q Or they could just offer a bounty, they could do
23 some other way of contracting for the upgrade.

24 A Well, I mean, if you're trying to incentivize
25 search, a rev share might be a better way.

1 So they might want to do it that way because
2 you're going to get both. You're paying them to do the
3 upgrades but also paying them in a way that encourages more
4 search.

5 Q Let's go to UPXD290.

6 And the CEO, Mr. Pichai, was asked, "But Google
7 could provide a separate financial incentive for security
8 upgrades outside of the RSA, correct?"

9 "Answer: Sure, we could structure it that way."

10 You don't have any reason to disagree with him?

11 A I already answered that.

12 I just said -- I just told you that they could do
13 it that way.

14 Q Okay.

15 And Google now pays Android partners directly to
16 encourage investment by Android partners, right?

17 A Yeah, they've kind of restructured the RSA
18 agreements in various ways.

19 Q Right.

20 They -- I think the testimony was that they broke
21 the RSA into two, and they offer a separate agreement to
22 help encourage investment.

23 Do you see that? Have you heard that testimony?

24 A Yeah, I -- I've looked at what they've done. It's
25 a little complicated to figure out exactly how they divided

1 it up, but yeah, they've divided it up into two -- generally
2 you kind of think of as two pieces.

3 Q Okay.

4 And with respect to quality devices, have you seen
5 any documents at Google that says, Our goal in RSA payments
6 is to ensure quality devices?

7 A I think I might have. I don't have any off the
8 top of my head.

9 I know that they think of the RSA as encouraging
10 more search, but -- and some of that comes through
11 encouraging people to have better devices, but I couldn't
12 give you a document off the top of my head.

13 Q Okay.

14 So let's go to Slide 96.

15 And the heading you've got is "MADA's Baseline
16 Consistency Facilitates Competition within -- in Android."

17 Do you see that?

18 A I do.

19 Q And -- but sometimes Google's Android partners
20 would prefer a little differentiation so they could compete
21 with each other, right?

22 A Well -- yeah, I mean, they might prefer
23 differentiation, some of which might increase competition
24 but some of it might decrease competition between them, make
25 it hard for people to move back and forth.

1 Q Right.

2 Have you seen any Google documents that show
3 whether reducing the demands of the RSA and MADA would
4 affect the quality of the phones as far as differentiation
5 between the different manufacturers, any research at all?

6 A Well, I -- I would go back.

7 I mean, I'm an economist. I don't generally do
8 this by looking at their documents. I look at the
9 marketplace, I use economics, and I look at the failing
10 systems that Android and iOS replace, and the consistency
11 was an important feature that the succeeding operating
12 systems had relative to the less successful systems.

13 Q So you didn't look at Google's documents on this
14 subject?

15 A No. I'm an economist, I look at markets and how
16 those markets work, and we learn from the marketplace
17 itself. It's the standard approach in economics.

18 Q Okay.

19 So let's go to UPX128.

20 And that's in your first binder. It's also going
21 to be on the screen, of course. And just let me know when
22 you've got there, sir.

23 A Hang on. Switching costs.

24 Q A hernia should not be part of the switching
25 costs, so if you need any help, let us know.

1 A All right.

2 Q 128, are you there, sir?

3 MR. DINTZER: And this is admitted, Your Honor.

4 BY MR. DINTZER:

5 Q Have you seen this document before, sir?

6 A I don't remember it, actually.

7 Q Okay.

8 So it's dated August 26th, 2016.

9 MR. DINTZER: I can't remember if I said this.

10 It's admitted, Your Honor.

11 BY MR. DINTZER:

12 Q And the top involves Mr. Pichai.

13 Do you see that?

14 A I see his name, yes.

15 Q Okay.

16 And so -- and the subject is "Nexus Launcher
17 Without QSB."

18 Do you know what QSB is?

19 A Not off the top of my head.

20 Q Okay.

21 It's -- it's a term for the widget.

22 And we're going to go to the third page of the
23 document, 547.

24 And the email from Hiroshi Lockheimer. It's dated
25 August 22, 2016.

1 Do you see that?

2 A Yeah. Do we -- I'm just trying to get a context
3 here.

4 Q If you look at the whole thing, sir.

5 I mean, I certainly want you to have context. I
6 want you to know what I'm going to be looking at just so you
7 can understand where I'm going, but you're welcome to see
8 the whole thing.

9 A Well, I'm not even sure the thing tells -- I mean,
10 they obviously know the context that they're talking about.
11 I'm not even sure I can infer the context from the document
12 so -- do we have any idea what this is about?

13 Q Well, I -- I'm really not in a position to explain
14 it, sir. I can show you what I'd like to ask you about, and
15 if you have -- if you don't have anything to say about it,
16 then that's fine.

17 A Okay. Go ahead.

18 Q Okay.

19 So the portion I'm going to refer to is up on the
20 screen.

21 And Mr. Lockheimer writes -- and do you understand
22 that he oversees Android? Do you know his position?

23 A I don't know his position, but I'll take your word
24 for it.

25 Q And he writes, "Sorry I missed your IM Phillip.

1 I was headed to SFO."

2 And he writes, "Here's the logic. One, users are
3 generally tired (visually) of our widget. It's in the
4 middle of the screen, obscures your family picture,
5 et cetera."

6 Do you see that?

7 A Yes.

8 Q "Second, OEMs are Very," capital very, "tired
9 (visually) of our widget because of one, and also because
10 they feel like they don't get to differentiate."

11 Do you see that?

12 A I do.

13 Q Okay.

14 And you're not surprised that the different OEMs
15 want to differentiate their products from each other,
16 are you?

17 A Well, sometimes you want to differentiate,
18 sometimes you want to be more similar. It depends on
19 whether you think one is more valuable than the other.

20 Q The OEMs' ability to differentiate from other
21 OEM -- Android OEMs, would allow them to compete better for
22 selling Android?

23 A I mean, differentiation sometimes makes me compete
24 less with somebody. Sometimes it makes me compete more,
25 because we might become more different, and then we don't

1 compete as closely, or we become more similar, which would
2 be less differentiation, then we might compete more.

3 Q Have you done any analysis on whether the OEMs,
4 the Android OEMs, could benefit from being able to
5 differentiate and compete with each other?

6 A There certainly are dimension in which they
7 benefit from differentiation.

8 Q No. 3 is that -- Mr. Lockheimer states, "Now that
9 we think like an OEM (the nexus team), two really
10 resonates."

11 And do you know what the nexus team is?
12 Do you know what the nexus is?

13 A It's my -- what time -- it might be pixel people.

14 Q It's the predecessor to pixel.

15 "So now that Google is actually kind of doing the
16 OEM thing, they themselves understand why OEMs are very
17 tired visually of the widget."

18 Do you see that?

19 A I do.

20 Q "Google" --

21 A I see an Apple.

22 Q -- "understood the value of an Android OEM being
23 able to differentiate."

24 Do you see that?

25 A Yeah, they -- I think they're saying, that, we

1 better understand too, so it says what it says, yes.

2 Q But the widget is still required under the MADA;
3 is that right?

4 A Yes, although I think, again, this is where you
5 have to think like an economist.

6 Remember, there's a monetary -- there's a benefit
7 to Google from installing the widget.

8 Q Sure.

9 A So I would assume if they took the widget off,
10 then they would charge OEMs for the -- for the GMS package,
11 right, because Google is getting less in the barter in that
12 case.

13 I don't know if anybody has asked the OEMs whether
14 they prefer to get rid of the widget if it meant less money
15 and going in the other direction, right?

16 This is the trouble when you say, Oh, I would like
17 this, right. I'd like a Maserati, but when I get to the
18 Maserati dealer and they tell me it's \$300,000, well, not
19 that much. Right?

20 So you always got to ask, Is it worth what I have
21 to pay to get it.

22 So when you tell me, Oh, they would like this, you
23 have to take that into consideration.

24 Q Let's go to your Slide 49, sir.

25 And this is about Mozilla; is that right?

1 A It is.

2 Q And they promote rival search services, according
3 to your heading, each time a user clicks on the address bar,
4 right?

5 A That's correct.

6 Q Okay.

7 And -- but when a Mozilla user clicks on the
8 address bar, the other search options, they don't change the
9 default, they just -- they're just one-offs, right?

10 A Yeah, because it's a search this time with.

11 Q Right.

12 A You'd be kind of upset if you did that and it
13 switched your default, right?

14 Q So you have to do every single time -- if you want
15 to use one of the other ones in the list, every single time,
16 you have to go down and use one of the other ones, right?

17 A No. If you want to change it permanently, you
18 change the default.

19 Q These would be non-default search providers.

20 A Yeah, they're -- they're non-default, but they're
21 still search providers who are getting some promotion in
22 this way.

23 Q Okay.

24 Do you know if they're paying for that promotion?

25 A I don't know -- I don't know off the top of my

1 head, no.

2 Q When Google committed to paying Mozilla for
3 rev share to be the default, Google was aware that Mozilla
4 gave these other options in this way, right?

5 A I believe they were aware of that, yes.

6 Q And you offered no data to show how frequently
7 this -- these other search items were used?

8 A Yeah, I don't think I had data on that, no.

9 We know uses of search engines on Mozilla, but we
10 don't know if they're using this option to do that.

11 Q Now, let's go to Slide 47.

12 And you testified that Google's agreements aren't
13 exclusive because other general search engines can have
14 bookmarks on Apple, right?

15 A Well, that was one of the reasons.

16 I presented lots of other reasons, but that was
17 one.

18 Q Okay.

19 Searching through a bookmark requires an extra
20 click?

21 A It does.

22 Q Okay.

23 Because if I click on Bing, then I go to the Bing
24 page, and then I can do a search there. But if I just put
25 it in the URL line at the bottom, I don't have -- that saves

1 me one step, right?

2 A I think so.

3 I don't know.

4 I don't have an iPhone, so I can't tell you. I
5 would assume that's how it works, but you should ask
6 somebody else who knows this device better than I do.

7 Q No, that's fair.

8 But this device that you have pictured on your
9 slide, you haven't actually used it and played with it and
10 it -- I mean, is that right?

11 A I haven't myself.

12 I think in -- when we were in a meeting as we were
13 putting together the report, I know many people on my team
14 have an iPhone, I'm pretty sure we did do this.

15 Q Clicking on a bookmark, the ones that you have
16 boxed here, they don't change the defaults, right?

17 A No, they don't.

18 Q So each time a user wants to search through Bing
19 or Yahoo!, they have to, again, go through the extra clicks,
20 right?

21 A Yeah, or Google.

22 And we know a lot of people use that bookmark for
23 Google. A lot more people use that bookmark for Google than
24 use it for the other ones.

25 Q And, again, Google was aware of Safari bookmarks

1 when it entered into its agreement with Apple for the
2 defaults, right?

3 A Well, depends on which agreement.

4 Q The current agreement.

5 A I would think for the current agreement, yes.

6 Q Google understands that being the default for the
7 URL bar has far greater value than the bookmark?

8 A I wouldn't say it has -- it has greater value,
9 certainly, although as I said before, you actually see
10 Google even though they're the default getting a fair amount
11 of traffic through the bookmark.

12 Q Do you know if that's because people don't know
13 who the search provider is when they click on a default such
14 as the one in Safari?

15 A I don't know. I can't get inside people's head.
16 But certainly some people know that it's Google
17 that's in the default. It's pretty well publicized.

18 Q But some people may not, which is why they might
19 click on the bookmark?

20 A I don't know. I'd have to look at the search bar.
21 I mean, most of Google's things, that says "Google" on it.

22 Q Let's go to your Slide 143.

23 Now, Google responded to the EU choice screen with
24 increased investment in the EU; is that right?

25 A We don't know about total investment. They made

1 some specific investments in the EU, largely -- to a good
2 extent in marketing but also in content acquisition. At
3 that time there was a go-big-in-Europe plan.

4 Q So you don't know what the total amount is but you
5 know that they did do some increase?

6 A Well, we don't know if it's an overall increase.
7 We know there was an increase in some elements.

8 Q Well, you know at the time of the choice screen,
9 Google's employees discussed investments in the EU, right?

10 A Yeah, they -- I had an extensive discussion of
11 this yesterday.

12 They recognize that on the choice screen, what
13 you're marketing for is somewhat different, and they
14 recognize being top of mind and other things was probably
15 more important at that point than it had been previously.

16 Q And you'll agree that investment in --

17 Well, let's do it this way. Let's go to UPX1083,
18 which is admitted, Your Honor.

19 Are you familiar with this --

20 Oh, I'm sorry, sir.

21 A I'm there.

22 Q No.

23 Okay. Are you familiar with this document, sir?

24 A Is this for Japan?

25

1 Q No, sir.

2 Do you know what FUDJE -- I believe it's
3 pronounced fudge?

4 A I don't know. I'd have to look inside. I don't
5 recognize the outside.

6 Q Okay.

7 And it's dated January 2020. Do you see that?

8 A I do.

9 Q And let's go to the Bates number 19055. And we're
10 going to bring it up on the screen. It's small so it will
11 be easier if we bring it up on the screen.

12 If we could perhaps make it a little bigger.

13 Thank you.

14 And it says, starting March 1, 2020 --

15 THE COURT: Sorry --

16 MR. DINTZER: -- only --

17 THE COURT: What's the Bates number again?

18 MR. DINTZER: Of this page, Your Honor, or of the
19 original document?

20 THE COURT: Of what's in -- the document page that
21 you're at.

22 MR. DINTZER: The page that we're on?

23 THE COURT: Yes.

24 MR. DINTZER: It's Google-DOJ-11319055.

25 THE COURT: Okay.

1 THE WITNESS: It's near the beginning.

2 THE COURT: Okay. Great. Thank you.

3 MR. DINTZER: Thank you, Your Honor.

4 BY MR. DINTZER:

5 Q Do you see it, sir?

6 You're welcome to have it in the binder. It will
7 be easier to see on the screen, I believe.

8 It says, "Starting March 1, 2020, all new Android
9 devices sold in EU will offer a default search engine choice
10 screen during phone setup."

11 We know about that, right?

12 A I do.

13 Q Okay.

14 And then on the right it says, "Go big in Europe
15 is product investments above and beyond business as usual to
16 make sure Google is top of mind for EU users." Right?

17 A I do.

18 Q Okay.

19 And you don't have any reason to doubt that the
20 go-big-in-Europe investment was above and beyond the typical
21 investment?

22 A Yeah, I had -- I take them at their word here,
23 that what -- I don't know what's going on with the rest of
24 their investments, but, yeah, I take -- that's what they
25 said.

1 Q Okay.

2 A But it -- you know, as I said yesterday, it's to
3 be top of mind.

4 Q Okay.

5 And let's go to your Slide 124.

6 Are you there, sir?

7 A I am.

8 Q And at the top, you say, "Microsoft's syndication
9 deal doubled its scale in December 2010, but this did not
10 lead to a material improvement in Bing's relative quality."

11 Do you see that?

12 A I do.

13 Q And so just so we're clear what we're looking at,
14 what you're showing is that Bing's quality compared to
15 Google didn't change, the gap between them didn't change?

16 A Correct.

17 Q So if -- hypothetically, if Google was matching
18 Bing's investment and quality increases, they would both be
19 getting better, it's just that the gap wouldn't change?

20 A Right. But we don't need to be hypothetical. We
21 actually have the data. I've looked at the data and
22 Google's didn't accelerate. So you don't see an
23 acceleration.

24 So the slowdown in the gap is not because Google's
25 improvement accelerated, it's actually because Bing's

1 improvement slowed.

2 Q Okay.

3 A So, you know, there's no reason to play the
4 hypothetical. We actually have data.

5 Q So let's go to -- you do understand that Google
6 watches and tracks Bing's performance, right?

7 A I do.

8 Q Okay.

9 And that competition from Bing has resulted in
10 increased quality at Google?

11 A I know there are internal documents at Google that
12 talk about, you know, what happened when Bing was launched.

13 Q Okay.

14 A And I know there are documents that talk about
15 what's going to happen after this -- after this syndication,
16 although it looks like they were wrong about that.

17 Q Let's go to UPX211.

18 And let me know when you're there, sir.

19 MR. DINTZER: Display advertising. Your Honor,
20 this is in evidence.

21 THE WITNESS: Okay. I'm there.

22 BY MR. DINTZER:

23 Q So this is, if we go to -- well, the cover slide
24 is "Precision and you". We're going to go to the third page
25 of the document, Bates number 5050.

1 Do you see that?

2 A I do.

3 Q And it says, "Precision September 2009 to April
4 2010."

5 Do you see that?

6 A Yeah, I do.

7 Q And below that, it says, "There are two," two,
8 capital TWO, "bad things about this graph. We are still
9 working hard and our precision is still not going up.

10 "Worse, there is this blue stuff on the bottom.
11 That's Bing. They've been working hard too, and their
12 precision is going up."

13 Do you see that?

14 A I do.

15 Q Okay.

16 So Google is finding that Bing's precision is
17 rising?

18 A I think that's shown in the data I showed you a
19 bit ago and it's consistent with what I cite in my report.

20 Q And they write, "They've gained about 1.5 points
21 of precision since last fall, and they are now only about
22 two points behind.

23 "This is bad."

24 Do you see that?

25 A Yes.

1 Q In 2009, in 2010, Bing's improvement was creating
2 competitive pressure on Google, correct?

3 A I think that Bing is always there and competing
4 with Google.

5 Q I'm talking about specifically on their quality
6 improvement.

7 A Yeah, their quality was improving relative to
8 Google over this period, and that's evident in the chart I
9 showed you a bit ago.

10 Q And in response to this, Google pushed to increase
11 its quality as well, correct?

12 A I don't know.

13 They talk about that. We don't really see
14 anything in the data that I've seen that they did that.

15 Q Let's go to 2086.

16 A Okay.

17 Q Okay.

18 And this is a June 2009 email. Do you see that?

19 A I do.

20 Q From Johanna Wright to Marissa Mayer.

21 And the third page of this document --

22 And this is in evidence Your Honor --

23 The third page of this document is Bing's
24 response.

25 Do you see that. That's a deck.

1 A Okay.

2 Q And at page .005, the fifth page of this document,
3 it states, "Bing is innovative. The top component of the
4 left nav is a feature we do not have. We need to
5 out-innovate Bing. We have many more innovations sitting in
6 the search quality area waiting to get out. Get them out.

7 "Create an effort to build a new version of
8 Search. Kick off effort with a day in Tunis with each
9 quality engineer showing a demo or describing the technology
10 they think they could build that excites them."

11 Do you see that?

12 A I do.

13 Q So Google's -- Bing's improvement in innovation
14 was spurring Google to move forward, correct?

15 A That's -- the documents seem to say they saw that
16 and they thought they should react. I say when you look at
17 the data, you don't necessarily see that that panned out.

18 Q And you don't see that that panned out because
19 Google might not have gotten better despite investing?

20 A Well, I haven't seen the data that says they
21 really changed their investments that much or significantly.

22 Q Let's go to your Slide 27.

23 And you say here on 27, "The challenged browser
24 default arrangements reflect the outcome of competition."

25 Do you see that?

1 A Yes.

2 Q And as I understand it, sir, when looking at a
3 competition, you consider all the challenged conduct in the
4 relevant market; is that right?

5 A Well, I'm asking -- I'm specifically here talking
6 to the browser default agreements.

7 Q If there are multiple bidders for a contract, that
8 will not always create competition that resolves
9 exclusionary concerns?

10 A That's why you've got to look at the actual
11 situation you're dealing with, which is what I did here.

12 Q Even with multiple bidders on a contract, you
13 might -- you believe in looking at things, other things to
14 determine whether there's exclusionary conduct, right?

15 A Well, as I spend a lot of time doing that, yes,
16 so I think it's the right thing to do.

17 Q Now, you reviewed -- a summary of your reports was
18 created and provided to the Court and you reviewed that;
19 is that right?

20 A I have.

21 Q Okay.

22 And in your summary, you write, "Professor Murphy
23 explains that the evidence shows that the opportunities to
24 supply search defaults have been intensely contested, and
25 that Google has succeeded because it offered a superior and

1 better terms."

2 Do you still believe that the -- that each of the
3 contracts in this case have been intensely contested?

4 A I was -- I'm not sure. I haven't gone back and
5 looked at each and every one. I would say, as a general
6 matter, yes.

7 Q Now, you understand that Google does not typically
8 consider competition when determining how much to pay in
9 rev share?

10 A Of course they do.

11 Q So it's your understanding that when Google is
12 calculating how much to pay in rev share, they don't
13 consider how much a competitor may be willing to pay for
14 Apple, Mozilla, Samsung, T-Mobile?

15 A No, they -- I don't know if they consider that,
16 but they consider how much they would lose, which is a
17 function of how strong those competitors are. So they
18 definitely consider competitors and competition.

19 I mean, the whole point of my report, right, my
20 discussion yesterday was centered on that.

21 Q Google typically has not used the amount of an
22 actual or estimated competing bid in determining how much it
23 was willing to pay on its rev share agreements, right?

24 A In -- well, they're focused more on their benefits
25 of what they would get, but part of that is determined by

1 what other people would do.

2 Q Okay. So I need a -- well, let's go ahead and put
3 it up.

4 Let's go to UPXD237.

5 MR. DINTZER: May I approach, Your Honor?

6 THE COURT: Sure.

7 BY MR. DINTZER:

8 Q And this is from the 30(b)(6).

9 MR. SCHMIDTLEIN: This is -- again, we'd ask that
10 the witness be allowed to consult UPX6024, which is the
11 entire response, not this excerpt.

12 MR. DINTZER: It's still in front of him,
13 Your Honor.

14 THE COURT: Okay.

15 So 6024.

16 And can you just identify the page number that
17 you're looking for.

18 MR. DINTZER: Yes, Your Honor. Page 17.

19 BY MR. DINTZER:

20 Q Are you there, sir?

21 A I am. I'm looking at it.

22 Q Okay.

23 And you're welcome to look at it. My question is
24 in its 30(b)(6) response, Google writes, "Google typically
25 has not used the amount of an actual or an estimated

1 competing bid in determining how much it was willing to pay
2 for its revenue share agreements with Apple, Mozilla,
3 Samsung, AT&T, Verizon, T-Mobile, and Sprint."

4 Do you see that?

5 A I'm still reading the document.

6 Q Okay. I mean, you're welcome to. Please.

7 A Okay.

8 Where are you reading from now?

9 Q It's on page 17, sir. I'm not going to read it
10 again. It's in the record. It's on the slide.

11 Do you see that, sir?

12 A I'm not there yet.

13 Q Okay.

14 A Okay.

15 Q Okay.

16 And so are you there now?

17 A I am.

18 Q Okay.

19 So do you have any reason to doubt that Google
20 typically has not used the amount of an actual or estimated
21 competing bid in determining how much it was willing to pay
22 for rev share agreements?

23 A I mean, there's other language on that same page
24 that kind of says they do consider that to some extent.

25

1 Q Okay.

2 Have you seen any documents, anything, where
3 Google is actually considering what -- or estimating what
4 competing bid a rival would make when Google is deciding how
5 much to pay for rev share agreements?

6 A Yeah, I would just read the next paragraph.

7 If you look at the next paragraph where it talks
8 about them modeling Bing and other things in the next
9 paragraph.

10 It's in a red box, I don't want to say it in too
11 much terms, but, Your Honor, it's the paragraph after the
12 one that he's citing.

13 THE COURT: Okay.

14 THE WITNESS: I think it's relevant.

15 BY MR. DINTZER:

16 Q Do you know, in that 2016 analysis, did Google
17 find that Bing couldn't profitably match Apple's payments --
18 I mean Google's payments?

19 A I don't think they knew.

20 Q Do you know if they reached that conclusion?

21 A I can't say. You should ask them.

22 Q Okay.

23 No further questions on that document, sir.

24 MR. DINTZER: Your Honor, now would be a good time
25 or I'm happy to go on.

1 THE COURT: No. Let's take a break for lunch.
2 We'll resume at 1:35.

3 So, Professor Murphy, same instruction as usual,
4 don't discuss your testimony during the break, sir.
5 Thank you.

6 THE WITNESS: Thank you.

7 THE COURT: Why don't you have a step outside so
8 I can talk to the lawyers, Professor. Thank you.

9 THE WITNESS: Sure.

10 THE COURT: All right. Mr. Dintzer, I think you
11 know what I'm about to ask.

12 MR. DINTZER: I do.

13 I will tell you that my estimate would be better
14 after lunch when I have a chance to go through and talk to
15 my team.

16 I'm looking at it, I'm guessing between one and
17 two.

18 THE COURT: Okay.

19 All right. Well, that's optimistic in terms of
20 being able to finish with Professor Murphy this afternoon,
21 I think, but we'll see where we are. I'm sorry.

22 MR. SCHMIDTLEIN: Depends on your view of
23 optimistic, but I hope Mr. Dintzer, with more time at lunch,
24 would be able to reduce rather than expand.

25 THE COURT: We'll see everybody at 1:30.

1 MR. SCHMIDTLEIN: Your Honor, we've also asked
2 them, since they heard Professor Murphy's direct, where we
3 stand with Mr. Davies.

4 THE COURT: Any update on that?

5 MR. DINTZER: Yes, Your Honor.

6 What we'd like to do is finish up Mr. Murphy -- I
7 mean, Professor Murphy, and two hours after he gets off the
8 stand, we'll send them out a conclusion on that.

9 THE COURT: Well, it would be helpful if I know so
10 I can focus on making a decision. So I'd certainly like to
11 know by the end of the day.

12 MR. DINTZER: Absolutely.

13 You mean by the end of the trial day? We can --
14 okay. Understood, Your Honor.

15 THE COURT: Okay.

16 MR. DINTZER: When I come back from lunch, as long
17 as it's -- I mean, once he -- I guess our ask would be this.
18 When Professor Murphy is done, if I can caucus with my group
19 for two minutes, I'll give the Court an answer if that would
20 be okay.

21 THE COURT: Sure.

22 MR. DINTZER: Okay.

23 THE COURT: Maybe that'll incentivize finishing by
24 5:00. Thanks.

25

1 COURTROOM DEPUTY: All rise. This Court stands in
2 recess.

3 (Recess from 12:34 p.m. to 1:35 p.m.)
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C E R T I F I C A T E

I, William P. Zaremba, RMR, CRR, certify that the foregoing is a correct transcript from the record of proceedings in the above-titled matter.

Date: November 14, 2023



William P. Zaremba, RMR, CRR

<p>BY MR. DINTZER: [38] 9994/6 9994/15 9995/5 10002/25 10018/1 10021/7 10024/23 10027/20 10028/20 10029/12 10032/7 10033/21 10038/17 10042/21 10043/15 10044/15 10045/4 10046/8 10050/2 10051/7 10053/8 10054/1 10054/9 10057/14 10057/17 10058/3 10062/19 10067/11 10073/7 10079/11 10086/13 10095/4 10095/11 10106/4 10108/22 10114/7 10114/19 10116/15 COURTROOM DEPUTY: [4] 9986/4 10062/11 10062/14 10118/25 MR. DINTZER: [49] 9986/15 9992/16 9992/24 9993/2 9993/10 9993/21 9994/9 9994/25 9995/3 10002/21 10024/15 10027/19 10028/9 10028/12 10028/18 10029/10 10033/19 10038/15 10043/14 10046/6 10049/21 10049/24 10050/22 10051/2 10052/23 10054/8 10057/9 10057/24 10062/5 10062/18 10067/10 10073/4 10095/3 10095/9 10105/16 10105/18 10105/22 10105/24 10106/3 10108/19 10114/5 10114/12 10114/18 10116/24 10117/12 10118/5 10118/12 10118/16 10118/22 MR. HERRMANN: [8] 9986/19 9986/22 9987/9 9987/13 9988/21 9990/9 9991/23 9992/14 MR. SAFTY: [4] 9987/17 9989/12 9990/19 9990/25 MR. SCHMIDTLEIN: [16] 10024/20 10032/4 10038/6 10042/17 10044/14 10044/17 10049/16 10052/18 10052/22 10052/24 10053/1 10053/6 10079/3 10114/9 10117/22 10118/1 THE COURT: [76]</p>	<p>9986/2 9986/11 9986/18 9986/21 9987/7 9987/12 9987/16 9988/20 9989/7 9990/8 9990/16 9990/24 9991/6 9991/24 9992/15 9992/21 9993/1 9993/6 9993/13 9993/19 9994/14 9994/24 9995/1 10002/23 10016/20 10017/25 10020/24 10021/6 10024/19 10024/21 10027/18 10028/7 10028/11 10028/16 10029/9 10032/5 10033/16 10038/8 10038/11 10042/16 10042/18 10044/19 10046/7 10049/22 10050/20 10050/24 10053/24 10057/12 10057/16 10057/19 10057/21 10062/7 10062/16 10067/9 10073/6 10079/4 10086/12 10105/15 10105/17 10105/20 10105/23 10105/25 10106/2 10114/6 10114/14 10116/13 10117/1 10117/7 10117/10 10117/18 10117/25 10118/4 10118/9 10118/15 10118/21 10118/23 THE WITNESS: [28] 9993/18 9995/2 9995/4 10002/22 10017/3 10021/5 10028/14 10029/11 10038/7 10038/9 10044/23 10050/1 10051/3 10052/21 10052/25 10053/3 10053/7 10053/25 10057/13 10057/20 10057/23 10057/25 10079/6 10106/1 10108/21 10116/14 10117/6 10117/9 \$ \$300,000 [1] 10099/18 ' 's [3] 10069/17 10072/6 10072/11 'What [1] 10055/13 . .005 [2] 10070/21 10111/2 .028 [1] 10058/23 .032 [1] 10059/19 .33 [1] 10059/20</p>	<p>0 006 [1] 10025/12 009 [1] 10060/15 0095 [1] 10060/16 0315 [1] 10069/21 0316 [1] 9983/9 0340 [1] 9983/4 098 [1] 9989/2 1 1.5 [1] 10109/20 10 [1] 10033/2 100 percent [2] 10066/7 10069/9 10036-6710 [1] 9983/19 1100 [1] 9983/3 11319055 [1] 10105/24 1133 [1] 9983/18 116 [1] 10057/21 11:05 [1] 10062/9 11:07 [1] 10062/13 11:20 [1] 10062/9 11:26 [1] 10062/13 124 [1] 10107/5 128 [1] 10095/2 12:34 [1] 10119/3 1300 [1] 9983/14 134 [2] 10011/15 10011/21 138 [1] 10080/7 14 [2] 9982/5 10120/7 143 [1] 10103/22 15 [6] 10001/10 10050/5 10050/22 10051/1 10051/6 10051/10 16 [1] 10063/4 17 [2] 10114/18 10115/9 19055 [1] 10105/9 1:30 [1] 10117/25 1:35 [2] 10117/2 10119/3 2 2.4 [2] 9996/12 9996/13 20 [3] 10029/6 10058/23 10083/4 20 percent [7] 10028/1 10028/8 10028/8 10028/9 10028/15 10028/23 10072/4 20-3010 [2] 9982/4 9986/5 20001 [2] 9983/8 9984/9 20024 [1] 9984/4 2007 [1] 9995/11 2009 [5] 10073/13 10073/19 10109/3 10110/1 10110/18 2010 [6] 10036/17 10080/1 10080/10 10107/9 10109/4 10110/1 2011 [4] 10009/17</p>	<p>10009/22 10011/18 10012/24 2012 [1] 10024/24 2014 [6] 10009/14 10010/13 10066/24 10069/14 10070/3 10074/4 2015 [2] 10067/3 10068/1 2016 [14] 9987/4 9991/23 9991/24 10015/7 10024/17 10025/4 10026/13 10055/19 10060/13 10067/3 10068/1 10095/8 10095/25 10116/16 2017 [3] 10000/25 10064/16 10074/18 2018 [4] 10043/16 10057/10 10058/5 10058/13 2019 [3] 9999/22 10000/3 10000/5 202 [4] 9983/4 9983/9 9984/4 9984/10 2020 [4] 10063/15 10105/7 10105/14 10106/8 2021 [3] 10055/13 10055/23 10073/13 2022 [1] 10009/23 2023 [2] 9982/5 10120/7 2086 [1] 10110/15 20th [1] 10043/16 212 [1] 9983/20 22 [1] 10095/25 2200 [1] 9983/19 26th [1] 10095/8 27 [2] 10111/22 10111/23 2793 [1] 9983/20 28-day [1] 10000/16 3 30 [8] 10049/12 10049/17 10054/16 10054/19 10062/22 10063/4 10114/8 10114/24 3010 [2] 9982/4 9986/5 307-0340 [1] 9983/4 3249 [1] 9984/10 328 [1] 10061/14 33 [1] 10052/16 33 percent [7] 10048/12 10049/1 10051/25 10052/15 10056/7 10060/3 10062/21 331 [1] 10061/1 333 [1] 9984/9 335-2793 [1] 9983/20 354-3249 [1] 9984/10 37 [4] 10079/13 10079/20 10080/4 10080/5</p>	<p>4 40 [2] 9982/7 10034/18 434-5000 [1] 9984/4 450 [1] 9983/8 47 [1] 10101/11 476-0316 [1] 9983/9 49 [1] 10099/24 5 5000 [1] 9984/4 5050 [1] 10108/25 508-6000 [1] 9983/15 540 [1] 10064/21 547 [1] 10095/23 5:00 [1] 10118/24 6 60 [1] 10048/14 6000 [1] 9983/15 6024 [3] 10049/24 10050/5 10114/15 64 [3] 10004/25 10006/19 10007/2 66 [1] 10048/18 6710 [1] 9983/19 677 [2] 9994/20 9995/7 680 [1] 9984/3 7 720 [1] 9983/15 724 [2] 10003/7 10003/12 732 [2] 10003/15 10003/16 7441 [1] 10050/5 7th [1] 9983/14 8 80 percent [2] 10009/17 10033/2 80203 [1] 9983/15 886 [2] 10054/10 10054/10 9 90 [2] 10082/21 10082/25 96 [1] 10093/14 977 [3] 9999/25 10000/8 10000/15 978 [1] 10001/23 9:30 [1] 9982/6 A a.m [3] 9982/6 10062/13 10062/13 ability [21] 9988/1 9997/7 10003/19 10004/2 10004/9 10006/24 10014/2 10016/8 10016/9 10018/3 10019/15 10020/4 10020/12 10021/9 10022/2 10026/23 10027/24 10028/6 10028/21 10077/22 10097/20 able [11] 10003/20</p>
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