BEFORE THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, et al., .
. Case Number 20-cv-3010
Plaintiffs,
vs.
GOOGLE LLC, . October 25, 2023
Defendant.

TRANSCRIPT OF BENCH TRIAL, DAY 27
(AFTERNOON SESSION)
BEFORE THE HONORABLE AMIT P. MEHTA
UNITED STATES DISTRICT JUDGE

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PROCEEDINGS
(Call to order of the court.)
THE COURT: Mr. Sallet, whenever you're ready. JONATHAN BAKER, WITNESS FOR THE PLAINTIFFS, RESUMED STAND DIRECT EXAMINATION (Continued) BY MR. SALLET:
Q. Professor Baker, I would like to now turn your attention to the topic of exclusive pre-installation default agreements, if $I$ might.

Let me begin by asking you, to what extent do you believe that low user share affects rivals' ability to compete?
A. Well, it makes it harder. A low share makes --
Q. Professor Baker, could you be a little closer to the microphone, if that's okay.
A. Oh, sorry. A lower share makes it harder for rivals to offer high-quality general search results and attractive advertising opportunities, and it makes it less attractive for other firms that could help general search firms to compete to work with them, by which I mean SVPs and the independent SEM tool -- search engine marketing, SEM, tool providers.

And so together, that disadvantages the firm with the low share in attempting to compete.
Q. And do I understand that you will be discussing these points later as a part of your --
A. I'm sure we'll --
Q. -- competitive harm?

Can you provide us with a brief overview of your opinion on the effect of defaults on user switching costs?
A. Yes. So my view is the defaults increase user switching costs, and there are several reasons. One is the general tendency of consumers to retain defaults that are set by others, and that's well-established in the behavioral economics literature.

Another is Google's home page study, which is not this kind of default, but is another kind of search firm default, but that matters to search users, Google found.

The third is Bing's higher share on Windows desktops, and that's where the Google defaults cover fewer queries.

And the fourth is Google's projections of substantial revenue losses if it were to lose the Apple and Android defaults.

And then Google's willingness to pay a substantial price for the defaults also suggests that the defaults increase user switching costs.

MR. SALLET: Your Honor, I would like to approach the witness with two demonstratives, two additional demonstratives. And if I might explain, they are both figures from Professor Baker's first report. We would like to use them as demonstratives so they can reflect the redactions that we've been provided by Google for these figures, if I might. And I'm
going to hand up two.
THE COURT: Okay.
BY MR. SALLET:
Q. So Professor Baker, can you simply identify, what is the first figure? It's marked PSXD12, but it also notes from your first report figure 18.

Do you see that?
A. Yes, I see that. This is a figure that reports the -- it takes the -- it's the share of the queries from Google, Bing, and Yahoo!, the general search queries, that were eligible for payment under one of the Google distribution agreements, meaning the exclusive pre-installation of defaults.

And would you like me to describe --
Q. If you would, yes, please.
A. So I guess I'm allowed to say that it was --
Q. Can I ask, Professor Baker, because you've not seen this redaction before, if $I$ could, Your Honor, there is something redacted on the very right side.
A. Yes.
Q. And the other material is not redacted.
A. That appears to be the scale for the red line, but $I$ don't think $I$ need to talk about that at all.
Q. Okay.
A. So the main point is in the blue bars, and you can see in 2021, slightly more than half of all the search queries were
eligible for payments, essentially covered by the distribution agreements, and that share had been rising, you know, since -from 34 percent in 2014.
Q. And can you just identify the major sources of data for this analysis?
A. Yes. Let's see. We have data from Google, its access point data and its data on the defaults and data from -- and various other requests for data. So it's mostly Google data, but there's also, it looks like, Microsoft Ad data, and I don't recall what the Google deposition exhibit is, but that's in the list, too.
Q. And it ends in a 2021 percentage; correct?
A. That's correct.
Q. I'm just going to use that as a basis.

Your Honor, what we've done is we've taken two figures and marked them as a single demonstrative. So the next page does not have a different exhibit number, but it is figure 19 from the same report, the first of Professor Baker's reports.

So, Professor Baker -- and this is an unredacted slide.
A. Yes.
Q. How does this differ from figure 18 that you just discussed?
A. So this shows the fraction of queries that are covered, both by the exclusive default agreements and also by Google Chrome or the Google Search app., but it's really all Chrome in
practice.
And so you can see that 51 percent in the previous slide were covered by the distribution agreements in 2021. If you add in Chrome, 84 percent of queries are covered by a Google default. And that total number has also been rising from 56 percent in 2014.
Q. Thank you. We're going to return to your demonstrative deck.

So you were just talking about share among the general search engines. Have you measured at all what is Bing's share on a Windows desktop?
A. Yes. The -- let me turn to mine so I see the number.

So this shows that -- so this is a share of -- that is of queries that are just on Bing and Google. So it's leaving out some other firms, but it's -- so it's the share combined between Google and Bing.

So you can see that on the bottom, Bing overall gets 8 percent of those queries, which is a little bit higher than its market share, because it's just Google and Bing queries.

But on -- when it's queries that come on Windows desktops where there are, you know, less defaults to Google, it gets 22 percent of the queries. And if you look at queries that are on Windows desktops that are not made through the Chrome browser, and the reason is because the Chrome browser has a Google default --
Q. It's a redacted --
A. -- it's a redacted number of -- for the Bing share of those queries. It's higher. And -- well, that's what it shows.
Q. And what is the import of this analysis?
A. That when users are not subject to a Google default, Bing gets a higher share of them.
Q. Have you looked at projections of Google --
A. I'm sorry. And that's consistent with the idea that there are substantial user switching costs.
Q. Thank you. Have you looked at projections of revenue losses made by Google if it were to lose Apple and Android defaults?
A. Yes. That was also in my initial slide, and that's based on Google projections when it was evaluating Apple defaults in 2016 and when it was evaluating what would happen if it lost the Android defaults.

And what Google is doing in those cases is supposing that it's losing -- that another firm gets the defaults agreement instead of Google.
Q. And Professor Baker, what you're looking at here is in terms of revenue losses; correct?
A. That's correct. This is its revenue, ad revenue loss, basically is the point. And you can see the redacted figure, that it would lose a substantial amount of revenue, according to its own projections.

And then what the rest of the slide points out is that given that it's got half the queries under the default agreement -- I guess it was 51 percent in the last slide -- that means that it would also lose queries, a substantial query share, if it lost the default position to a rival.

And what the final bullet points out is that if the rivals -- if Google loses the share, its rivals will gain it, and if that improves rivals' quality, that could shift an even greater share of revenues and queries to its rivals than is indicated here.
Q. So before the lunch break, I asked you about the impact of scale on a rival's ability to compete.

Do you recall that?
A. Yes.
Q. And have you seen testimony on this issue in the case?
A. Yes. Mr. Parakhin talked about it. What's in the box is a paraphrase. The testimony is on the right side. Mr. Parakhin indicated that a small increase in share would be more valuable to a small general search firm, because it would allow the -- a firm to substantially improve its -- the quality of its results. Q. And for the three markets you've defined, in terms of the conduct, that is, the search defaults, do you see any benefits to competition from the existence of Google's exclusive defaults?
A. Not substantial benefits, not in the markets that I define.

That's basically for the reason that Mr. Parakhin is discussing. If you start from a high share and get additional users, that doesn't increase the general search firm's quality very much compared to what would happen to a small firm that gets those same users. And that's what Mr. Parakhin is talking about as well.
Q. And now, what effects, if any --
A. It may not be in this particular excerpt. Oh, I guess it does. It talks about it tends to moderate in his slide when it does -- yes, it does.
Q. "Moderate" is a reference to the larger firms?
A. The larger firms' quality increase. There are diminishing returns in terms of quality to greater scale once a firm's share is high. That was the testimony.
Q. How do you describe the effects, if any, of the exclusive defaults on competition?
A. Well, they get more likely that the search users will stick with Google, and that makes it harder for the rivals to compete, and for the reason we just discussed, there isn't a substantial countervailing benefit to the buyers, and that makes it harder for the rivals also to work with other firms that would help them attract search users and search advertisers.
Q. I would like to turn to what you described earlier as the second category of exclusionary conduct that you've analyzed, which is to say SA360.

And just to state the obvious, I think, there's been testimony through the trial about the ability of firms to buy ads through native tools, Google Ads, Microsoft Ads, or, as an alternative, through SEM tools.

And I would like you to just provide your analysis speaking to the fraction of ad revenue on Google and Bing that comes through a major SEM tool provider, and that's slide 73.
A. So that's the number that's redacted in the top right off the table. That's the fraction of general search ad revenue on Google and Bing that comes through a major SEM tool.
Q. And then the bottom half --
A. It's a percentage. It's not a fraction.
Q. It's a percentage, yes. I know some fractions, I could turn into percentages, so probably close.

Looking at the bottom half of the chart, this is a different analysis; correct?
A. Yes.
Q. And could you describe what is the analysis that you're doing in the bottom portion of the redacted chart?
A. So that looks at only the general search ad revenue that was placed through a major SEM tool, and the four major SEM tools are listed on the left. And of the revenue placed through an SEM tool, the percentage that was placed through SA360 is marked in the highlighted box for 2020.
Q. Okay. And have you done analysis that would help you
understand how important SEM tools are to Bing's advertising business?
A. So this table shows the -- in 2021, it shows in the highlighted box the percentage of Bing's general search ad revenues that were placed --
Q. And this is redacted.
A. Yes.
Q. Excuse me.
A. They were placed through an SEM tool, through any SEM tool.
Q. And so if you were to look -- and don't give the number, but if you were to look at the total, the first row, and go all the way to 2021 --
A. Oh, I'm sorry. Yes, that's right. Okay. Yes.
Q. -- what would that number tell you, without using the number?
A. That's the -- so that's telling you -- I misspoke a moment ago. That's the percentage of Bing's U.S. search ad revenue that comes through SA360.
Q. Okay. And then there's a bottom row. And if you went to 2021 and looked at that number, that percentage --
A. Yes. That's --
Q. -- what would that tell you?
A. That's the percentage of Bing's U.S. general search ad revenue -- oh, of the $S E M$ tool revenue that was placed through SA3 60.
Q. So if you took Bing's revenue, then you only looked at that portion that came through the SEM tools, and then you asked what percentage SA360 was of that smaller number, that's what would be shown here?
A. That's correct.
Q. Okay. Just at a high level, before we go into details, what is the basis for your opinion that Google's SA360-related conduct contributes to competitive harm?
A. Well, so --
Q. If we could go to the next slide, slide 75. Sorry, Professor Baker.
A. I'm sorry. Are we on -- yes.
Q. Slide 75.
A. I think it's slide 76.
Q. That's one of the reasons I'm not an economist.
A. So we have exclusive defaults that are making it harder for Google's rivals to compete in search advertising markets. Then on top of that, the SA360 makes it even harder for rivals like Bing to attract advertisers and, you know, compete for the sale of ads in ad markets.
Q. And are you limiting -- strike that.

When you talk about Google's rivals, are you only talking about Microsoft?
A. No. It's Bing and then all other rivals that use Microsoft Ads to place ads on -- that they show on their SERPs. So that
includes DuckDuckGo and Yahoo!, for example. It would also include any potential entrant that wanted to enter and make an agreement with Microsoft to provide it with ads in the same way. Q. And do you have a view, Professor Baker, as to whether, and if so why, Bing needs to attract advertisers that use these SEM tools?
A. Yes. An advertiser that uses an SEM tool has chosen to use a tool that facilitates advertising on multiple general search firms. So these are essentially the advertisers that want to have campaigns that run on multiple general search firms, and this is the kind of tool that lets them do that effectively, or most effectively.

And so they are the advertisers that are the best targets for a firm like Bing that wants to encourage advertisers to switch from Google to them.
Q. And have you looked at evidence -- let me ask, is it your view that Google rivals, including Microsoft, were harmed by what I believe you've characterized as a delay in SA360's support of Microsoft's auction-time bidding?
A. Well, I think I -- I think it hasn't yet been implemented.

So it's -- I mean, assuming --
Q. That's a ---
A. I'm sorry. Can we repeat the question?
Q. I'm just asking if you have evidence -- where I'm really going is, do you have evidence on which you rely on this
question?
A. Yes. About the harm to Microsoft? Was that the question?
Q. Yes.
A. So there's documents and testimony that indicate first that advertisers value auction-time bidding generally, and then there's additional information $I$ saw indicating that advertisers value Microsoft's auction-time bidding specifically, not just the function generally but Microsoft's version of it.

And then there's also -- I've seen evidence indicating that SA360 advertisers wanted SA360 to include Microsoft's auction-time bidding.

So the implication of all these things is that SA360 advertisers would have used Microsoft's auction-time bidding, and that would have increased Microsoft's revenues and profits. And that's the sense in which Microsoft would have been -- was harmed.
Q. So I would like to go through each of these three bullets in more detail.

Please describe some of the evidence you relied on for your opinion that advertisers value auction-time bidding.
A. Yes. Well, first, there are other SEM tools that implemented auction-time bidding for both Google and Microsoft, which indicates they think their advertisers would like it and value it.

I've seen testimony from an advertiser that -- to the same
effect, that it values auction-time bidding, and that's the testimony from Mr. Booth that's on the screen about how auction-time bidding is a productive strategy and their standard, et cetera.

Then there's also -- I've also seen that Google found that advertisers using its auction-time bidding typically increased their return on ad spending by 15 to 30 percent. So they're using Google's auction-time bidding, and they're finding auction-time bidding to be valuable. And this is an e-mail excerpt from -- an e-mail thread that is on the slide saying that.

And then finally, auction-time bidding was used in a redacted but large percentage of SA360 ad spending on Google Ads. So when the advertiser is spending -- is buying the ads on Google Ads, they're commonly using auction-time bidding. Q. So --
A. The SA360 advertiser is commonly using auction-time bidding.
Q. So the second point we saw on slide 77 a minute ago was that advertisers value Microsoft's auction-time bidding specifically.

Can you describe some of the evidence you rely upon for that point?
A. Yes. Okay. So I saw Skai advertisers had signalled to it, I saw testimony to that effect, that they wanted to use

Microsoft's auction-time bidding. And then Skai itself found that using Microsoft's auction-time bidding increased sales conversions by a substantial but redacted percentage.

And I've also seen testimony from two advertisers that reported experiencing better ad performance when they used auction-time bidding on Bing compared to using -- to buying ads on Bing through SA360, where they couldn't take advantage of Microsoft's auction-time bidding.

And I think -- I'm pretty sure that was a discussion -those advertisers were mentioned yesterday in testimony with Mr. Amaldoss.
Q. And you also made the point a few minutes ago that SA360 advertisers wanted Microsoft's auction-time bidding.

Can you show us some of the evidence on which you rely for that proposition?
A. Yeah. This was a survey Google conducted of its SA360 advertisers and asked them what sales and service features they would like to see SA360 offer.

And auction-time bidding for other search engines was among the top 10 requested features.
Q. Can you read the line right below what you just read as a number 1?
A. For Microsoft Advertising?
Q. Yes.
A. They talk about other search engines, including Microsoft

Advertising. That's next to the plus sign.
Q. So given this evidence, Professor Baker, why would Google not want to promptly support Microsoft's auction-time bidding on SA360?
A. Well, if Microsoft supports all the features of -- I'm sorry.

If SA360 supports all of the features of Microsoft auction-time bidding, that makes it easier for SA360 advertisers to shift some of their ad spending from spending on Google to spending on Bing or somewhere else, and that would be costly to Google as a whole.
Q. So could you give us an illustrative example to understand the money that is at stake? And this is a very, very redacted slide.
A. Okay. So this is an illustrative example. It shows the profit to Google as a whole on average for selling a $\$ 100$ ad that's placed through SA360 and placed to appear on Google's SERP. That's the left-hand bar. And the right-hand bar is if the $\$ 100$ ad is sold through SA360 but placed on Bing.

And if you go back to the left-hand bar, the blue bar, the high blue bar is the profit, the average profit on that ad, and that's basically the -- that's the profit that Google earns on the ad.

The little sliver at the top is the -- it's actually the revenue that SA 360 earns on the commission for placing that ad.

And SA360's profit would presumably be no higher than that.
So of the total profit, the great, great majority is from placing the ad, not from -- I'm sorry. It's from the ad itself placed on Google rather than using SA360.

So if that same ad were placed on Bing, if you go to the right, and it was placed through SA360, then the profits to Google as a whole is just the little sliver of the SA360 profit, which is much less.
Q. So I'm going to ask you a question, and it's going to be hard because it's redacted, but in the blue column, there's a dollar figure; correct?
A. Yes.
Q. And you've called this illustrative a few minutes ago; correct?
A. Yes.
Q. And then can you describe note 1? The calculation is redacted as to what you're doing in note 1 .
A. Note 1 just shows a range for -- based on Google's accounting data for what that average profit on a $\$ 100$ ad would be. And you can see I just picked a number in that range to illustrate on the figure.

And then note 2 is the average commission, the fee, SA360 fee for -- in two different years.

So that was the basis for the revenue number in the figure.
Q. And did you find any additional impact on Google if
advertisers were to move from Google to Bing?
A. Yes. Well, if advertisers were to switch from Google to Bing, that would tend to reduce the amount of bidding for Google Ads, and that would tend to decrease prices for Google Ads. That's the direction of the effect.

And Google has so much advertising. So even if there was a small decrease in prices that resulted from this, they would be very costly to Google.
Q. And am I understanding you to say that without the SA360 conduct, there might be lower prices for advertisers that continue to advertise on Google?
A. That's correct.
Q. You're familiar with Dr. Mark Israel; yes?
A. Yes.
Q. And you're familiar with the fact that he served as a Google expert in this case?
A. Yes.
Q. And have you reviewed Dr. Israel's reports in this case?
A. Yes.
Q. So I would like to ask you, how do you respond to

Dr. Israel's claim that Google would have no incentive to refrain from supporting Microsoft Ad features on SA360 because a firm necessarily has an incentive to sell more of a complementary product?
A. Well, the predicate that the SEM tool, let's say 360, and
the ads are complementary products is correct. But that's not the only incentive -- the incentive that Dr. Israel points to is not the only incentive that's relevant to Google.

Google also has an incentive to protect its ad profits from decreasing and protect its market power from erosion, and that incentive dominates here. Again, that would mean -- and that's why Google wouldn't want to enable all of the Microsoft Ad features necessarily.
Q. And so we've talked about advertiser views. Have you seen any evidence from Microsoft that you regard as consistent with what you've seen from the advertisers about interest in effects of SA360 being enabled?
A. Yes. I've seen testimony from Microsoft about estimates that Microsoft made in both 2020 and 2021 about the annual loss in revenue from -- to it from Google not enabling all of the features, the features of Microsoft Ads that it -- that are at issue here and not enabling them on SA360.

And it's a substantial number. And the point isn't the actual dollar number, the dollar level. The range is somewhat imprecise. It's that it's a substantial figure, and that's consistent with what I've explained before why I think that advertisers value auction-time bidding.
Q. So you know there's been testimony during the trial thus far about whether advertisers switch between SEM tools. How do you analyze that question?

To put it one way, if advertisers like what Skai has, why don't they just switch from SA360 to Skai or some other independent search tool provider?
A. Well, it's true that some have, but there are costs that make that -- there are costs of doing so. And I've listed them some on the screen, on the slide.

It's time-consuming. The transition from one SEM tool to another can take, I've seen testimony, months to a year.

When you switch an SEM tool, the advertiser has to leave behind what it learned about how -- about how to make its bids, its advertising strategy, and then accumulate that learning again so it's not -- so it's losing out on that learning while it accumulates a new learning, or else it has to pay to run both tools at the same time. Either way, there's a cost to it.

And then if an SA360 advertiser switches to another SEM tool like Skai, it might not be able to use all of Google's capabilities as effectively, and it could pay more.
Q. So Professor Baker, during the course of the trial, we've heard some testimony about advertisers that have moved from one SEM tool provider to another.

Does that evidence contradict the conclusion you've just described?
A. No. Advertisers are heterogenous. They have different -basically different benefits from switching, and the costs might not be identical for each one of them. So they will make their
own calculation. And some -- it's not surprising that some switch, even though there are these kinds of switching costs. That's not inconsistent with what I just observed.
Q. If there were no switching costs, what would you expect to happen?
A. Well, if -- advertisers who weren't happy with Google or SA360 not enabling all of these Microsoft Ad features would then switch away, and that would -- would help -- that would -- or at least the threat of that would encourage SA360 to add those Microsoft Ad features more quickly.
Q. And in the presence of the switching costs that you've described, what effect does that have on Google's incentives? A. Well, it means that because of those costs, Google has less incentive to enable the -- all the Microsoft Ad features. Q. And do advertisers take into account -- well, let me strike that.

Let me begin, you showed us some market share figures for Google Ads in the defined markets, correct, just earlier, market share and --
A. General search advertising.

I'm sorry. I talked over you. Pardon me.
Q. I was just referring to the fact that you had previously noted market shares for two advertising markets; is that correct?
A. That's correct.
Q. And does Google Ads' very high share of ad volume in those markets bear on a high utilization of SA360? Is there a relationship?
A. Well, yes. SA360 advertisers, like all advertisers or like many advertisers, want to -- find it attractive to advertise on the general search firm that has the high share. That firm can do a better job targeting of ads, for example, because of its share.

And if you have only -- and if you're a small advertiser and you only have one general search firm you can advertise on, well, you don't want to -- it's expensive to advertise on more than one. So you would be more likely to pick Google because of the high share.

And the -- I know where I was going, but I've lost the actual question. So could you get to where -- help me with that?
Q. Could I ask one more question before you get there?
A. Okay.
Q. The last of the bullets on this chart, does this speak to the point you've just made, that there's particular reasons not to move away from SA360 to an independent search tool provider like Skai?
A. Yes, because if you want to advertise on Google -- that is where I was going. Thank you, Mr. Sallet.

If you want to advertise on Google and -- particularly and

SA360 does a better job of using all of Google's capabilities than some rival tool, then that's a reason to prefer sticking on SA360 to switching to the rival tool.
Q. In your view, do advertisers benefit when SA360 refrains from supporting Microsoft Ads features?
A. I missed the first few words. Could you say that again?
Q. Sure. Of course. My apologies.

In your view, do advertisers benefit in any way when SA360 refrains from supporting Microsoft Ads features?
A. No, because the advertisers who use SA360 are not able to take advantage of a feature of Microsoft Ads that's valuable to them.
Q. We've been talking about advertisers who use SA360. Of course, there are advertisers that don't and advertisers that don't use any SEM tool provider.

Do you have a view about consequences, if any, of Google's SA360 conduct on the group of advertisers as a whole?
A. Yes. Google's conduct, including its SA360-related conduct, discouraged competition in advertising markets. And that tends to keep ad prices higher than -- higher than they would otherwise have been. And that would harm all advertisers, regardless of whether they use SA360.
Q. And in your view, if Bing were a stronger competitor, would SA360 have a greater incentive to introduce Microsoft Ad features earlier than they have?
A. Yes, SA360 would want -- under your hypothesis, would want to compete more aggressively to attract advertisers that wanted to advertise on Bing if Bing were a stronger competitor.
Q. And I just want to -- before we leave this slide, the title is "consequences of Google's SA360-related conduct for advertisers as a whole."

You've separately talked about effect of the exclusive defaults, correct, earlier?
A. Yes, I did.
Q. And can you tell us how you went about understanding when SA360 might have been introduced -- I'm sorry. I've got that wrong.

Could you tell us how you've gone about understanding when SA360 might have introduced Microsoft's auction-time bidding in a world in which it had greater incentive to do so?
A. Yes. That's based on this chronology that's laid out on this slide. Google and Microsoft introduced auction-time bidding on their native tools in 2016. And then you can see that SA360 announced its introduction of Google's auction-time bidding in late 2019 and that Skai, an independent SEM tool provider, enabled Microsoft's auction-time bidding in 2020. Q. So how, if at all, does this chronology help you understand what might have happened if there had been greater incentives for SA360 to support Microsoft Ad features?
A. Well, it suggests a benchmark. The -- yeah, it suggests a
benchmark to look at, to answer that question.
Q. And could you help us with the use of the term "benchmark"? In what ways a benchmark?
A. I just mean an indicator of what might have been feasible if there was a greater incentive -- if SA360 had a greater incentive to introduce Microsoft's auction-time bidding.
Q. Do you have an understanding, Professor Baker, as to whether Skai had enabled the Google auction-time bidding prior to its support of the Microsoft auction-time bidding?
A. Yes. That was the testimony from Mr. Vallez, who said that having worked with -- to implement Google's auction-time bidding, that made it easier -- made it possible to introduce Microsoft's auction-time bidding more quickly.
Q. And using Skai as a benchmark in the manner you've described, what would the delay to date, if I can say it that way, Professor Baker, have been if SA360 would have enabled Microsoft's auction-time bidding, say, right now, today?
A. Today? So 2023, October, on this slide, and that means that if the benchmark is when did Skai do it, if Google then enables Microsoft's auction-time bidding now, that would be three and a half years later -- or a three-and-a-half-year delay.
Q. This would suggest, in your view, that Microsoft was at a disadvantage in attracting advertisers for about three and a half years?
A. Yes.
Q. Professor Baker, are you familiar with the testimony of a Google employee named Ryan Krueger?
A. I believe I reviewed at least some of it.
Q. And do you recall that he said that SA 360 was still months and months away from empowering Microsoft's auction-time bidding?
A. I think he said something like that. It might have been "many months" or "many, many months."
Q. Many, many months; let's say many, many months.

If you were doing a calculation of delay and you took his projection to be accurate, would you just add those many, many months from the current time, today?
A. That's correct, three and a half years plus many, many months.
Q. Professor Baker, you've talked about a benchmark. Can that benchmark be properly understood as some kind of legal mandate that would be applied to Google?
A. No. It's just a way of understanding what would have been feasible if -- when it might have been feasible for SA360 to introduce Microsoft's auction-time bidding if it had a greater incentive.
Q. And the incentive is being a more competitive market?
A. That's correct.
Q. So I want to show you a slide that Google's counsel used in
the opening of this case. It has your name on it. And he made -- Mr. Schmidtlein made these five assertions about your testimony in SA360, and I would like to go through and ask you about each.

First, the assertion that you offered no opinion that SA360 has market power in any market, how do you respond to that? A. Well, $I$ don't need to know if a firm has market power, if there's market power in a related market, to understand that the out-of-market conduct can have an effect in the market.

It's something like would happen -- the Microsoft Court did, where it didn't need to understand -- define a market for personal computer hardware in order to understand the effects of licensing restrictions involving hardware on operating system competition in the market that it did define.
Q. The second bullet says, "No analysis of what percentage of advertisers only use SA360 to buy search ads."

How do you respond to that?
A. Well, I didn't need to know that percentage in order to understand that SA360 advertisers are attractive targets for rival search firms trying to increase their advertising business.
Q. The third bullet, "No analysis of cost of switching from SA360 to Bing Ads native tools."

How do you respond to that?
A. Well, the -- so this is switching to the native tools as
opposed to another SEM tool, and when you do that, that means that the advertiser gives up the advantages of using an SEM tool to manage campaigns across multiple general search firms. And I talked about those switching costs in my report, in my original report.
Q. Fourth, "No independent analysis of whether Bing Ads lost ad spend due to delayed feature implementation on SA360."

How do you respond to that?
A. Well, the -- I explained that the documents and testimony that showed why there's reason to think Bing Ads -- that Microsoft did lose spending, and that was more -- I thought more reliable than trying to do data analysis here, because it's hard to -- we don't have any observations where SA360 ever introduced the Microsoft Ad features in order to look at the effect.
Q. As to auction-time bidding?
A. I'm sorry, yeah, the auction-time bidding specifically, that's right.
Q. And then the fifth, "No opinion that Google's SA360 conduct has impacted ad auction pricing or overall search advertising output."

How do you respond to that?
A. Well, $I$ just discussed the way in which SA360 conduct would affect pricing, tends to keep prices higher than they would otherwise have been. And when prices are higher, the band curve sloped downward. And so one would expect output to be lower
than it otherwise would have been.
Q. Your third bullet was "no analysis of cost of switching from SA360 to Bing Ads native tools"; yes?
A. That's correct.
Q. I would like to show you slide 95 --

THE COURT: Could I ask you to go back to a thing you just said a moment ago about the incentives that SA360 would have had in a more competitive marketplace.

And I thought I understood you to say that SA360 would have had greater incentive to incorporate auction-time bidding sooner if there was a more competitive marketplace.

Did I understand that correctly?
THE WITNESS: I guess what I -- if I said that, what I really should have said is if Bing and the other search firms that use Bing were stronger. With that amendment, yes.

THE COURT: So what explains a small company like Skai having an incentive to incorporate auction-time bidding when it did, when I understand your opinion to be that Google didn't have the same incentive?

THE WITNESS: That's correct. Well, having less incentive doesn't mean having no incentive. And Skai is looking for incremental business, and one place to find it is with advertisers who want to use -- advertise on -- and use auction-time bidding when they place their ads on Microsoft.

So as I said before, advertisers vary in how they -- their
costs and the benefits they see. And so there are some advertisers they could attract by offering these features that they wouldn't otherwise do.

And I believe they worked with Microsoft and -- because Microsoft wanted them to introduce it, and that Microsoft helped them. But I've forgotten the details of how that works.

BY MR. SALLET:
Q. Could I just ask a follow-up to the Judge's question? Is Skai itself owned by a general search engine?
A. I don't believe so, no.
Q. So when you talked about Google's incentive, you're talking about the incentive of being the same company that gets the profit on the ads and gets a fee on SA360; correct?
A. That's correct.
Q. So a SEM tool provider that is not affiliated, not vertically integrated with a general search engine firm would not be getting the underlying ad revenue that goes to Google or Bing; it would only get the fees on the sale of ads? Correct? A. Yes. In terms of that chart, it would only get the little commission sliver.
Q. And those commissions would be the same, no matter whether the advertiser was buying Google or Bing; correct?
A. You mean for a firm like Skai?
Q. Yes.
A. I believe that's correct.
Q. And would this set of examples --

MR. SCHMIDTLEIN: Your Honor, objection. Can we get some nonleading questions here?

MR. SALLET: Sure.
BY MR. SALLET:
Q. And given the circumstances, would Skai's position, perhaps, have any effect on its incentives to support multiple ad features from multiple general search engines?
A. Well, that was what Your Honor said before. This is not -they wouldn't have the same disincentive that Google had. You opened up your question that way.
Q. Right. The third bullet, if I might, Your Honor, is, "No analysis of cost of switching from SA360 to Bing Ads native tools."

Do you see that?
A. Yes.
Q. And so I would like to ask you to look at slide 95, which is a Microsoft document, and ask you, what is the relevance of this document, if any, to the question of whether advertisers would move from SA360 to Bing Ads native tools?
A. Well, this Microsoft document indicates that large advertisers prefer SEM tools to native tools. It's what I -something like what I said before. And you can see that "a large percentage of sophisticated clients rely on tool providers for ease of budget and campaign management and reporting.

Without tool provider support, we introduce friction and see lower adoption."

So that's -- oh, did I --
Q. No, that is not redacted.

Right, Mr. Schmidtlein? That's just for emphasis.
That's -- the yellow highlighting?
A. I think that's right. That's just for emphasis.
Q. A false positive, I think.

MR. SCHMIDTLEIN: That's Microsoft, their document. MR. SALLET: That's right. I'm sorry.

We understand this to be not redacted.
BY MR. SALLET:
Q. Did I give you a chance to finish your answer?
A. Yes, I did.
Q. What is the import of this slide to you?
A. That a -- the sophisticated advertisers, the sophisticated clients want to use SEM tools to manage campaigns across multiple search firms, and that would be the -- an advantage they would give up if they were to try to run campaigns on multiple search firms using the native tool on Microsoft, say, while using an SEM tool, like SA360, to place other ads on Google.
Q. I would like to now move to the question of competitive harm, if I may.

Professor Baker, do you have a view as to whether Google's
conduct simply harms rivals or, in addition, harms competition in the markets you've defined?
A. Yes, it harms competition, as well as harming rivals.

The -- when you -- the conduct that Google engaged in made it harder -- discouraged competition, made it harder for all of its rivals and potential rivals to compete.

And so it's a simple economic, you know, proposition, that when you make it harder for all the rivals and potential rivals to compete, that's going to help protect Google's market power from erosion.
Q. So let's go through the different categories of conduct.

In brief, can you summarize how the exclusive defaults harmed competition?
A. Yes, we talked about how they raised user switching costs, and that made it harder for Google's rivals to attract search users and search advertisers.
Q. And then moving to the other category, can you tell us briefly how the SA360-related conduct harmed competition?
A. Yes. It made it harder for advertisers using Microsoft Ads to -- I'm sorry. It made it harder for advertisers -- for Bing and other advertisers to get supplying ads from -- that were supplied ads by Microsoft to attract advertisers and compete in advertising markets.
Q. And you also said earlier that the two types of conduct, exclusive defaults and SA360, each make it easier for Google to
engage in the other.
So I would like to start by asking you how, in your view, exclusive defaults affect Google's ability to engage in the SA360-related conduct?
A. Yes. We talked about how the defaults protect Google's scale advantage in general search services, and that makes advertising on Google's rivals less attractive. And that means that Google's less likely to lose advertisers if SA360 doesn't have all of the Microsoft Ad features. So that makes it less costly for Google to engage in the SA360-related conduct.
Q. So Professor Baker, if advertising on Google rivals is less attractive, how would that affect the incentive of independent tool providers to enable Microsoft Ad features?
A. If advertising on Microsoft Ads is less effective, that would tend to discourage SEM tool providers from enabling the Microsoft Ad features like auction-time bidding.
Q. And I would like to show you slide 98, if I might.
A. And I should say, it doesn't mean that all of them didn't -- it doesn't mean that's not existing with some SEM tool providers adding those features, but it would tend to discourage them from doing so.
Q. Okay. This is a Microsoft document, and again, there is yellow highlighting for emphasis, but this is not redacted. So you're free to read any portion of it.

Does this document bear any relevance to the incentive of
independent tool providers to support Microsoft Ad features?
A. Yes. It shows that -- it indicates that Bing's low share in ad markets makes Bing less relevant to the SEM tool providers, which is consistent with what $I$ just said.
Q. And could you read the sentence that immediately follows that in the next heading?
A. The two sentences that are highlighted, you mean?
Q. Two, yes, sir.
A. "Competition for tool provider prioritization is
increasingly challenged. Bing's shrinking market share as mobile dominates search."
Q. So there's a graph at the bottom left of this slide. Could you tell us what it shows, what you understand it to mean?
A. This is a -- this shows -- this was a 2019 document. So
this is showing the growth of mobile search versus desktop search. But the blue bars on the left are mobile search as a percentage of total search. And so the first two -- and I'm not sure about 2019 -- are actual numbers, and then the last two, 2020, and '21, are forecasted numbers.

And you can see that the share of search that comes -- that comes through mobile devices rather than desktops was growing and forecasted to continue to grow.
Q. So can we go in the opposite direction from what we've been talking about? In your view, does the SA360-related conduct have any impact on the ability of Google to acquire exclusive
default agreements?
A. Yes. So if you think of an exclusive default agreement that's close to ending and is up for renewal, the -- the SA360-related conduct means that in the bidding for the renewal, a rival can't take as much advantage of the default to expand its business as it would otherwise. And so that makes it less likely to, you know, bid enough to win the default.
Q. I want to turn to what you describe as benefits of greater competition and start on search and search quality.

But do you have a view as to whether search users would be benefited from greater competition in general search services?
A. Yes, they would be -- search users would benefit from greater competition in general search services because that greater competition would tend to improve the quality of those services.
Q. And is there economic literature or does the economic literature tend to support that?
A. Yes. The economic literature, you know, is clear that competition would -- tends to lead to greater quality, lower prices, more innovation and investment. And so greater quality is a part of that.
Q. So slide 99 contains some points. Could you walk through these points, explaining your own views and evidence that supports it?
A. Sure. These are reasons why in this case greater
competition -- beyond the economics literature generally, why greater competition would tend to improve the quality of general search services.

And the first is a Google analysis indicating that with greater competition Google would have an incentive to invest more in general search services.
Q. And is there other -- could you just take us through the other points on the slide.
A. And there's testimony about Microsoft -- I'm sorry.
Q. Could we just go back to 99 -- yes. 100 is so close to 99, we will stay on 100 .

Before we go on, Professor Baker, just for sake of completeness, could you tell us about the other evidence that you think bears on this point of quality?
A. Yes. There's testimony about Microsoft analyses that indicate that Google had -- its search results had greater quality in countries where Google faces more competition.

And then I am -- I will say something about evidence that with more competition, greater -- general search firms would have used more SVP partnerships to improve search result quality. And with greater competition, the search users who value privacy would have had more choices.
Q. So now I want to take you back to the first bullet on the page and ask you, you say "Google analysis." To what Google analysis do you refer?
A. It's a analysis of what it would do in -- or it's a review of -- it's analysis of Google strategy options, I guess you could say, in other countries where it faced greater competition in general search than it faces in the United States.
Q. So I would like to go to slide 101. This is -- can you describe the source of this document?
A. It's a Google document from 2009, referenced in the bottom of the slide.
Q. And according to this document from Google, where did Google face substantial competition from a regional competitor?
A. Well, they talked about four challenged markets where Google is not the search leader and the challenges that Google faced were common. And those countries were Japan, China, Russia, and the Czech Republic.
Q. And as you said, the document calls these markets "challenged markets." Why do you think it's helpful to look at these other countries for purposes of understanding Google's analysis and the competitive landscape?
A. Well, Google executives who conducted this analysis thought it was reasonable to think about them, and economists, economic literature has lots of examples of cross-market comparisons from which inferences are made about how competition works or other things.
Q. So let's go to slide 102. Can you tell us based on this slide how you understood Google described the competitive
landscape in these countries?
A. Yes. So nothing's redacted here? This is all
highlighting?
Q. Yes.
A. So you can see that in all four of these countries, Google thought its share of queries was less than 50 percent -- that would be the general search queries -- and that it had a rival in each of these four countries that had a share that was greater than 50 percent.

Google's share was anywhere from 20 to 41 percent, and the main rival was anywhere from 54 to 75 percent. And who the main rival was differed across the countries. In Japan, it was Yahoo! Japan; in China, it was Baidu; in Russia, Yandex; and the Czech Republic, Seznam.
Q. So this slide is entitled "Our Competitors Have a High Share and Differ in Models."

I would like to show you slide 103, the title of which is "Focus Must Change Along the Competition Curve."

Do you see that?
A. Yes.
Q. What is the competition curve?
A. Google is plotting out a -- how it thinks about its position based on its search share. So you can see on the vertical axis, that's Google's search share. And Google describes its position as lagging, second place, parity, or in
the lead, depending on its search share.
In these four countries, they weren't -- two of them, it described itself -- Google described itself as in second place. That was the China and Russia. And in the other two, Czech Republic and Japan, it described itself as in rough parity there.
Q. And on the right-hand side of the slide, Professor Baker, in other words, product in blue, reach users and start monetizing in green, and monetize in pink, what do you understand those to mean in relationship to the chart to their left?
A. I understand that as Google, thinking about its -- how its strategy ought to differ based on how -- what its share was.
Q. And monetize is which area of the curve?
A. That's the highest part -- higher part of the curve, above where the flags are on the curve.
Q. And the flags, am I correct, show where Google believed it was on the competition curve in each of these countries; is that correct?
A. Yes, uh-huh.
Q. So suppose, Professor Baker, you were to take the flag of the United States and place it today on this competition curve. Where would the flag of the United States appear?
A. Well, based on the market share that I testified to earlier, it would be -- it's really not even on -- it's higher
than the scale on the left. So the U.S. flag would be far off to the right off to the chart -- off of the chart.
Q. I would like to show you slide 104, another slide from the same deck, which starts with the title "Think and Act Big to Overcome the Competitive Hurdle."

Could you take us through what you believe was important to your understanding on this part of the Google analysis?
A. Yes. This slide makes the economic point that a firm that faces competition wants to -- has an incentive to try to get ahead by, you know, investing and innovating. And it talks about the need to overcome the competitive hurdle, because it's facing substantial competition, and that the critical factors for success include investing more than the standard level, and unleash the innovation machine by customizing and launching products fast and specifically for each market.
Q. Could I just ask, in the bullet that's not highlighted that starts with the word "adopt," can you just read that for a moment.
A. Sure. "Adopt a long-term, multi-year planning approach across products, sales, marketing, partnerships."
Q. And what did you understand to be the general import of this analysis?
A. It shows that -- what I would expect, that a firm that sees itself as facing competition has an incentive to invest and innovate to try to get ahead and escape that competition, that
it's being pushed to invest and innovate by its -- by the competitive threats it faces.
Q. So a moment ago, when I asked you to place the flag of the United States, you said it would be off above the scale -- the percentages on the left, off to the right.

So does that tell us anything about what you think are Google's incentives to invest or innovate in the United States today?
A. Well, Google in the United States today doesn't face the need to overcome the competitive hurdle that it believed itself to face in these challenged markets in 2009. So it wouldn't be prompted by a competitive threat to invest and innovate the same way it was prompted to or -- the same way it was thinking about in response to the competitive situation described on the slides.
Q. Are you saying that Google has no incentive to invest and innovate in the United States?
A. No, not at all, just that it would have a greater incentive if it were faced with more competition.
Q. And is there economic literature that supports that view?
A. Yeah. There's a -- yes, there's economic literature that says that firms that are competing or trying to get -- have an incentive to try and get ahead of their rivals, and they will invest and innovate and try to improve productivity and the like.
Q. So can I just ask, these countries that we've been looking at, they are different in many respects from the United States, different languages, different regulatory regimes, for example.

Do you think it's reasonable to make a comparison based on these countries, given potential differences?
A. Well, Google's executives who did this analysis thought so, and I don't have any reason to question that.

As I said before, economists, you know, will rely on cross-country analyses to understand competition or other things that the economic literature is concerned with.
Q. We've spent some time on these slides, Professor Baker. So it's reasonable to ask, why is it important for your analysis of competitive effects in the United States that, in your view, Google sees a need to invest and innovate in these other countries at that time?
A. It indicates what Google's -- that Google would -- that I would expect Google to have had a greater incentive to invest and innovate and compete and try and get ahead of its rivals in a more competitive but-for world absent the challenged conduct. Q. So earlier, you said there was also Microsoft analysis to which you had referred; correct? Do you remember that?
A. Yes, that's correct.
Q. And that, in fact, is what you say in this slide in the highlighted bullet.

Can you describe the analyses on which you rely?
A. This was from the testimony from Mr. Parakhin about the way that Microsoft compared the quality of Google search results in countries where Google faced a substantial general search rival, one with a more significant share, and compared that with the quality of Google's search results in countries where it did not face a rival of a more significant share.
Q. And what did Microsoft's analysis find?
A. It found that the search result quality was higher in the countries where the rival -- I'm sorry, where Google had a rival -- that Google's search result quality was higher in markets where Google had a rival with a more significant share and, in particular, that Google did -- invested more in providing country-specific local information, like restaurant hours and menus or good local maps.
Q. In other words, to your second bullet, it has higher-quality search results as a result of investment? Is that what you said?
A. Yes.
Q. And in your view, what, if anything, does this show about the significance of competition for search result quality? A. Well, it shows that Google has a greater incentive to compete by investing in improving search result quality when Google faces greater competition.

THE COURT: I'm sorry. Along what metrics did the Microsoft analysis determine that the search result quality was
higher?
THE WITNESS: My understanding of this is from talking with Mr. Parakhin and his testimony here.

And the way I understand it is that they looked at a -that Microsoft knew that Bing's quality was the same in these various countries because Bing hadn't invested in these local search improvements, and it could look at Google's quality relative to Bing in all of those countries, with Bing as essentially the baseline or the -- to measure it against.

And the countries differed not because Bing differed, but because -- it's whether Google faced a strong rival, significant rival or not. But beyond that, I don't know how they performed the analysis.

BY MR. SALLET:
Q. But from what you do know, what, if anything, do the comparisons Mr. Parakhin made tell you about what would have happened in a more competitive world in the United States?
A. Well, I would expect that in a more competitive but-for world, absent the challenged conduct, where -- that it would be easier to ruin Google's market power, and there would likely be more competition, that Google would have a greater incentive to invest in search result quality than it does now.
Q. Can you take us through your reasoning as to why this harder competition from Google and its rivals would take place were there more competition?
A. Yes. So the rivals -- in a more competitive world, Google's rivals would have a better chance of succeeding, and that would give them a greater incentive to invest in new and better products, because they could make more money and the greater chance those investments would pay off.

And Google would also have a greater incentive to invest. It would fear falling behind.

And the upside is that all firms would have a greater incentive to invest in a more competitive world.
Q. So Google is the incumbent. Is your notion that Google would have an additional incentive to invest, does that find any basis in the economic literature of which you are aware?
A. Well, it's what you asked before, that firms have a -- the economics literature suggests firms have incentives to try and get ahead of their rivals and invest and innovate, and that greater competition leads to lower prices, higher quality, more innovation, greater investment, greater productivity, and the like.
Q. So on slide 110, the third bullet that you had noted earlier and that we are noting now has to do with evidence that with more competition, general search firms would have used more SVP partnerships to improve search result quality.

Can you give us a recitation perhaps of the evidence on which this opinion is based?
A. Yes. There's evidence from Google and evidence from Bing.
Q. Could you start with the Google evidence?
A. Yes. That's slide 112. This is a document indicating that Google saw its major rival in Japan, Yahoo! Japan, was accelerating investments -- that Yahoo! Japan was accelerating investments in various vertical segments, local and shopping. And that put Google's revenue at further risk.

So it's seeing a revenue risk from rival investments.
Q. And I know you're going to come back to this, but just to set the stage very briefly, why were you looking at Japan? What was it about Japan?
A. Oh, I was looking -- Japan is a more competitive situation for reasons I will talk about in a bit.
Q. And your takeaway from this slide has to do with the revenue risk you already noted; is that correct?
A. Yes. So Google is facing a revenue risk, that's correct.
Q. So I would like to go to slide 113. This is from the same -- the same 2021 presentation, and it's labeled "strategy overview."

So what did you see about what Google was considering it might do in Japan, given the competitive circumstances?
A. Well, one idea was -- one thing it was considering is highlighted. "Multi-year, Japan-focused product bets both within and across search properties to drive purposeful search, acquire new browse-first users, and build cohesive shopping journeys."
Q. And did any of the responses that were being considered, do you understand it involved working with SVPs?
A. Yes. You can see that on the next slide. This is from the same document, a different place.

And it's talking about how strategic partnerships and investments are a viable lever for search to quickly build vertical depth. And the hypothesis on the left is that deep integrations with strategic partners in key vertical segments provide immediate market access, establish user base, vertical depth, allowing Search to enter, meaning Google Search, enter and innovate faster.

And the potential partnerships, if you look at the shopping segment, the icons are blown up on the right, and you can see they're large SVPs.
Q. And do you know what Google actually decided to do in Japan?
A. No.
Q. If you don't know what Google ultimately did, how does this document help you?
A. Well, it indicates that when Google sees a need to respond to revenue risk, compete more aggressively, it looks to -- it looks to partnerships with SVPs as one way to do that, indicating that general search firms generally can use partnerships with SVPs to compete more effectively.
Q. So another point that you've made had to do with evidence
that Bing, with more competition, would have used more SVP partnerships.

Do you recall that?
A. Something like that, yes.
Q. Yes. And is there evidence on which you rely in thinking about whether Bing with more competition would have used -would use more SVP partnerships?
A. Well, this slide shows that with greater scale -- well, I'm sorry. That it wanted to use partnerships because of its small scale to improve its competitive position.

So this is testimony from a Microsoft executive talking about how partnerships provide content, and they need them particularly for mobile data because they're not -- they have such a small scale there, especially involving travel and local searches, which are relatively more common, I think, on mobile search.
Q. So the title of this slide, your slide, your language, Professor Baker, "Bing Needs Partners," you've referenced small scale, mobile, for example.

In your view, does small scale affect the interest that SVPs have in working with Bing?
A. Yes. Bing's small scale means that it can't offer SVPs as much traffic as if it had large scale. So that limits what value it can provide in SVP and makes it harder for it to partner with the SVPs.
Q. And can you summarize the evidence on which you rely?
A. Here are three examples of testimony from a Microsoft executive, an Expedia executive, and a Booking executive essentially making that point.
Q. So we're going to go to a slide that's redacted, but let me ask you, in your view, does Bing's limited scale pose any kind of impediment to reaching or continuing, for example, traffic for data deals with SVPs?
A. Well, I've seen three examples that I've listed on this slide in the testimony about partnerships that were impeded because of Bing's limited scale.
Q. And I would like to ask you specifically about one on a slide that is partially redacted. On this slide, which is 118, I think, yes, you describe some circumstances of a partnership that Bing and Yelp had; is that correct?
A. That's right. And so they had a partnership where Bing offered Yelp traffic in exchange for Yelp's data for a number of years, and that data was local services data.

And having that partnership also benefited Bing by letting it take advantage of Yelp's brand recognition and loyal customers and reputation for trustworthiness.

And then in the redacted part of the slide, you can see that -- the problem that Bing's small scale created and why the partnership ended.
Q. Is an implication of evidence that you've seen -- is one of
the implications that Bing's small scale can lead it to have to pay for data in addition or in place of being able to provide traffic in exchange for data?
A. Could you repeat that, please?
Q. Sure. Is an implication that you draw from Bing's small scale that Bing can have to pay to get data from content providers in place of or in addition to providing content providers with traffic in exchange for the data?

MR. SCHMIDTLEIN: Objection, Your Honor; leading. THE COURT: Rephrase the question, please. MR. SALLET: Sure. Thank you. Apologies. BY MR. SALLET:
Q. You've talked about Bing's small scale. Can you describe any implications that you believe that has in the kinds of partnerships that you've been discussing?
A. Well, without -- well, I'm worrying about the redaction. But the small scale made it more difficult for Bing to partner in ways that exchanged data for traffic, and so more likely that Bing would end up having to pay for data that it wanted instead. I think that's what you're asking, Mr. Sallet. MR. SALLET: Just a couple more questions, Your Honor. I have like four more, and then we will be done with this section. Would that be okay? THE COURT: Sure. BY MR. SALLET:
Q. Do you have a view as to whether Bing's small scale is due in any significant way to the various types of challenged conduct that you've described?
A. Well, in part, because the challenged conduct made it harder for Bing to expand and increase its share.
Q. Do you have -- you've talked about general search firms being interested in SVP content. Do you have a view as to whether general search firms -- not just Bing and not just with regards to one Bing partnership, do you have a generalized view as to whether general search firms put a value on content from SVPs?
A. Yes. I think we saw that Google placed a value in that Japan example, and Bing does, and there are many partnerships that general search firms have with SVPs.

So yes, in general, general search firms value partnerships with SVPs. There are ways to give them content that they help attract general search users to their sites.
Q. Professor Baker, you know, don't you, that there are arrangements between Google's rivals and SVPs in the United States today?
A. Yes.
Q. Okay. So do you have a view as to how that bears on what you think would come with better -- with greater competition? A. Well, with greater competition, it would be easier for small rivals like Bing to obtain more partnerships and use them
more effectively to expand their business and compete with Google.

MR. SALLET: Would this be a good time for a break, Your Honor?

THE COURT: Sure.
MR. SALLET: Thank you.
THE COURT: All right. So it's about 3:05.we will resume at 3:20. See everyone shortly.
(Recess taken from 3:03 p.m. to 3:21 p.m.)
(Call to order of the court.)
BY MR. SALLET:
Q. Professor Baker, before the break, we had gone through a slide of yours, a demonstrative about greater competition improving the quality of general search services, and I just point you to the last bullet on that, which is where we will pick up the discussion.
A. Yes.
Q. So I would like to turn to your opinion that search users who value privacy, in your view, would have had more choices in a more competitive world.

What is the basis for that conclusion?
A. That's based on the way in which Google's exclusive default with Apple limited the choice available to search users interested in privacy in the context of its -- Apple's conversations with DuckDuckGo.

Well, the slide explains the story. DuckDuckGo is a firm that focuses on privacy. It's a search firm. And it talked to Apple about becoming the exclusive default search engine for private browsing on Safari.

And the two firms did not reach an agreement, and in part, that was because of the Apple's pre-installation default agreement with Google.
Q. So we've been talking about search quality on the user's side. I'd like to turn to your opinions as to whether greater competition would provide benefits in advertising markets.

In fact, do you have an opinion on that question?
A. Yes. It's that greater competition would tend to lower ad prices. That's both what I would expect from economic theory, and it's also shown by a Google analysis of general search advertising prices in Japan.
Q. So in your view, what can one learn about the consequences of greater competition for advertising by looking at Japan? A. Well, Japan is a unique setting because of the regulatory environment. So Google's main rival in Japan is Yahoo! Japan, which is not the same firm as the Yahoo! in the United States.

And Yahoo! Japan gets search results from Google, which means that the blue links are the same quality as Google's. And then Google operates Yahoo! Japan's advertising platform. But the regulator there, the Japan Fair Trade Commission, requires that Google operate Yahoo! Japan's advertising platform
independently from its own advertising platform.
So the upside is we have the same blue links, or at least the same quality, and the two firms are competing to sell ads. Q. And what do you find to be the consequence of the competitive circumstances between Google and Yahoo! Japan?
A. So this regulatory scheme means that Japan simulates the result of more competition in general search services because competition would tend to make search quality parity possible and more likely.
Q. And does that have any implications to understanding the nature of advertising competition in Japan?
A. Yes. Greater general search competition would tend to create, generate greater search advertising competition. That's because when general search terms are more attractive to their users, they become more attractive to advertisers. And that means that if you have more competition in general search services, it's likely to lead to greater competition also in general search advertising.
Q. What would be the effect, if any, of greater advertising competition on the price of Google Ads bought in the United States?
A. Well, the conduct that we're talking about in this case tends to make ad prices in the United States higher than they would be in a but-for world absent the challenged practice.

In the but-for world, it would tend to be more competitive,
and so advertising prices would likely be lower.
Q. And what actually happened in Japan?
A. Well, in Japan, advertising prices were, in fact, lower. You can see this slide is from an e-mail exchange, and the bottom quote is about how Japan RPMs, an ad price measure, were so much lower relative to U.S. and U.K., and then they're discussing why, and one reason is the competitive situation in Japan.

And in that situation, advertisers are led to be splitting their search -- their advertising budgets between Yahoo! Japan and Google. So that advertising competition meant that the auction pressure, it says, on Google, was less, and that's the explanation that this quote gives for the lower prices. Q. Can you remind us -- I think you did speak to this, but if auction pressure is less, what effect, if any, does that tend to have on advertising prices?
A. Well, it -- less auction pressure means that advertising prices would tend to be lower. It's like if you're selling a house and two buyers are bidding on the house, you'll get a price, but if five buyers are bidding, you're likely to get a higher price. It's the same principle as applied to advertising.
Q. So I would like now to turn to how you understand what a more competitive world might look like based on your analysis of this case.

How would a -- in your view, how would a more competitive world in the United States compare to the actual world in the United States?
A. Okay. So in the actual world, Google has market power, and the conduct -- its conduct has lessened the incentive and the ability of all its rivals and potential rivals to compete.

If we didn't have Google's conduct in a but-for world, a hypothetical but-for world, Google's market power would have been easier to erode. And so its rivals would have had a greater incentive and an ability to compete in the search -general search market and the search advertising markets. And that would tend to lead to higher quality for general search services and lower advertising prices.
Q. And what would that mean, in your view, for competition specifically if I --
A. Oh --
Q. In a more competitive world, the factors that you've identified.
A. When you have greater incentives for all the firms in a market to compete, you tend to -- they will have greater incentives to improve their products and bring new products to the market and sell prices at -- prices more in line with cost.

And also, I would expect, in a more competitive world, that SVPs and SEM tool providers and the SERP section providers that sell the exclusive defaults would have greater incentives to
work with Google -- I'm sorry, work with Google's rivals, all of those potential partners.

And so that would all generate more competitive outcomes of the sort I've been talking about, greater quality, more choices for search users and advertisers, and lower quality-adjusted prices in the market as a whole, you know, for advertisers and potentially for search users, too.
Q. The very first line, "greater incentives for all general search firms," do you see that on that slide?
A. Yes.
Q. Does "all general search firms" as used there include or not include Google?
A. Oh, it includes Google. It's not just its rivals. It's Google as well.
Q. So suppose today at, say, 3:30 Google stopped all the conduct that you regard as exclusionary. Would the more competitive world that you contemplate come into being?
A. No, I wouldn't expect that to happen, because just stopping the conduct wouldn't remove the disadvantage to the rivals that has accumulated from the past conduct.

I don't know. It's sort of like if you're boiling water in a kettle and you turn off the heat, the water stays hot for a while. It's the same idea.

MR. SALLET: Before we conclude, I would just like to approach the witness, if $I$ may, with an exhibit that was used
yesterday with Professor Amaldoss. This is DX251.
Mr. Schmidtlein, I hope I get this one right. I believe Google treated this as wholly redacted yesterday. Is that correct?

MR. SCHMIDTLEIN: (Nodded head.)
MR. SALLET: Okay. So we're not going to show this.
Professor Baker, this is a wholly redacted slide.
I believe the title was unredacted; is that correct?
MR. MAURER: We redacted the bar graph. The rest of it wasn't.

BY MR. SALLET:
Q. Okay. So this is called "Sources of Traffic for Selected SVPs."

And do you recall that this was shown to Professor Amaldoss yesterday?
A. I saw that something redacted with something like the title like this was shown.
Q. And as it says at the bottom, the sources of traffic for selected SVPs is divided into various categories, one of which is direct app.

Do you see that?
A. Yes.
Q. And do you recall from your own analysis in this case your view about the methodology that was used to calculate the amount of traffic going to SVPs attributed to direct app.?
A. So I believe this was an exhibit from Professor Elzinga's report.
Q. That's my understanding, yes.
A. Okay. So the -- there are several problems with this exhibit. One is that it's talking about all traffic to the SVPs, not just the online traffic, and the -- and both matter to SVPs, but the online traffic is disproportionately incremental customers relative to the direct traffic.

The direct traffic means someone who has gotten the SVP through its app. rather than from a general search page.

And the traffic that comes from general search is disproportionately incremental customers, new customers or prior customers who aren't loyal relative to the direct app. traffic, which is disproportionately more loyal customers.

And so for a general search firm -- I'm sorry, for an SVP, incremental traffic is particularly important for growing in the long run. What the SVPs want to do is take these new customers or prior customers who aren't loyal and help them -- by interacting with them, convince them to become loyal customers, in which case, they may show up -- they may then decide to reach the SVP through the app., download the app. and reach it that way.

So, you know, both types of traffic are important to SVPs, but the online traffic that $I$ was -- that I talked about in my slide earlier today is important, particularly because it's
the -- it's about the sources of traffic for these customers that are disproportionately incremental.

So that's the conceptual problem.
Q. Can I ask you, just for the record, when you're using the term "online" in the last few minutes, are you describing categories of sources of traffic that include general search engines?
A. Yes, yes, that's correct.
Q. And you're contrasting that with what?
A. With all traffic that includes traffic that's not coming from anywhere online but coming -- I'm sorry. It's coming from the -- directly from the app.
Q. To the app.?
A. Through the app., yes.
Q. I interrupted you, Professor Baker. I'm sorry.
A. So then -- and then with respect to just how this was calculated, there are a couple problems.

The way that the direct app. traffic is measured overstates the relative importance of direct traffic, because it counts some things that I would consider traffic from general search as direct app. traffic.

So what I have in mind is, if a search user goes to a general search page and clicks on, let's say, an ad for an SVP, some of those ads allow -- are configured and sold to allow -to send the user -- to open up the user's app. and then send the
user to the app. on the mobile phone, let's say.
And that traffic, I believe, would appropriately be considered general search traffic, while the statistics here would count it as direct app. traffic.

And the same thing could happen in a different way if the search user is -- sees the SVP's name on the general search site and is reminded, oh, this is a -- I like this SVP, and I think I ought to really do this activity I'm thinking of on that SVP, and the search user decides to open the app. as a result.

I would consider that as prompted by general search, as general search traffic, but it would be counted as direct traffic.

And then there's another problem that's a more technical problem. The -- this doesn't show it, but my recollection is that -- oh, yes, it does. The sources, there's both App Annie data and SimilarWeb estimates.

And they identify visits in different ways, in a way that makes it -- leads to overstatement of the amount of -- the relative proportion of direct traffic when you put the two data sets together the way Professor Elzinga did.

And the problem is, as $I$ remember it, is that the -- if the -- the App Annie data is the SVP -- I'm sorry, is the direct app. traffic data, and the similar web data is the general search traffic data. That's what we talked about early on when we talked about my slide that's sort of similar to this. And
the -- if the user -- I'm trying to remember which one does it one way and which one does it the other. But if the user makes two visits in -- I'm sorry, if the user interrupts its activity and then comes back again, then that could be counted as two visits.

Well, they define how long an interruption has to be differently. And the upshot is that a visitor who goes to the SVP and then stops its visit and then does another visit is counted twice -- I'm sorry, and does all that with an interruption of between -- I think it's between five minutes and 30 minutes, so something like ten minutes is counted as making two visits on the way that the App Annie calculates it for direct traffic, but only one visit the way it would be counted if that were -- doing it from general search.

So the upshot is that the same kind of conduct is counted as more visits if it comes through the app. than if it comes through the -- from the general search page.

I think that's my recollection of how that worked.
Q. Can I just go back, because I think you ended a sentence a few minutes ago "on a mobile phone." So you were describing a circumstance where a user clicks a result on a general search engine and is taken to an app.

Were you describing that circumstance as on mobile devices or on all devices?
A. I know for -- my recollection is it's for mobile devices,
and I don't recall whether it's also for other devices.
Q. Okay. Thank you.

So Professor Baker, I would just like to ask you to briefly summarize the overall conclusions you've reached in this case. A. Yes. So Google has substantial market power in the three markets I defined: The U.S. market for general search services, the U.S. market for general search text advertising, and the U.S. market for general search advertising.

Its -- Google's exclusive pre-installation default agreements and then the SA360-related conduct lessened the incentive and ability of all of Google's rivals and potential rivals to compete, and each made it easier for Google to engage in the other.

And this conduct did not generate a substantial countervailing competitive benefit in any of the three markets. So that means that as a whole, it reduced the potential for the erosion of Google's market power in all three markets, and the result was harm to general search users and to advertisers.

MR. SALLET: Thank you. I have no further questions. THE COURT: Okay. Thank you.

Mr. Schmidtlein?

> CROSS-EXAMINATION

BY MR. SCHMIDTLEIN:
Q. Good afternoon, Professor Baker.
A. Good afternoon, Mr. Schmidtlein.
Q. I want to start off -- you've covered a lot of ground here today. I want to start off on SA360, if that's okay.

Would you agree that advertisers have several different ways in which they can buy search engine advertisements?
A. Yes.
Q. Okay. And if we can put up -- well, we've looked at a couple of different ways, the Court has heard testimony about a number of different ways that advertisers can buy.

One way in which advertisers can buy ads is through native tools; is that correct?
A. Native tools?
Q. Correct.
A. Yes, that's correct.
Q. And why don't we put up the opening slide.

So we've got a demonstrative here, DXD25.002, and let's see if this might help our discussion about the various different ways that advertisers can purchase ads on search engines.

So the first one depicted here is referred to as "platform, front end." That's the native tools channel that advertisers can use to buy ads on the various different search engines depicted there; is that fair?
A. That's what appears to be indicated on this slide, based on the examples. I don't know those -- that terminology, though. Q. Okay. But you're familiar with the terminology "native tool"?
A. Yes.
Q. Okay. And all of these advertising platforms have their own native tools that advertisers can use to place their ads directly on those platforms; right?
A. Well, I know that for Google and Bing. I don't really know about how Facebook works, for example.
Q. Okay. Another channel or another way that advertisers can place ads on general search engines is through a custom API integration, or a tool that the advertiser themselves builds; correct?
A. Yes.
Q. And large advertisers oftentimes build their own custom API integration that's specific to their particular needs; is that fair?
A. My understanding is that this is less common than the others by a lot, but you are correct that some large advertisers or agencies, and I'm not sure which or who, use it.
Q. The more sophisticated advertisers are more likely to want to build their own API integration; is that fair?
A. That sounds plausible, but I don't know for sure.
Q. Okay. And then a third method that we've talked about -you've talked about a little bit today is a buying tool offered by a third party, and that's frequently referred to as a search engine management, or an SEM, tool; is that right?
A. That's right.
Q. Okay. And SEM tool providers compete not only with one another, but also with these other ways in which advertisers can purchase search ads; correct?
A. I haven't analyzed any kind of competition among SEM tools or defined the market, but I agree with you that these are all ways that advertisers can buy the ads on general search firms. Q. If an SEM tool provider doesn't develop and offer a compelling SEM tool that they can persuade an advertiser to use in lieu of a native tool or a custom API integration, they're not going to win any business; right?
A. Yes, but there are switching costs involved.
Q. We'll get to those.
A. But yes.
Q. And you have not offered any expert opinion in this case that SEM tool ad buying, in other words this third channel down here on this slide, is its own separate antitrust-relevant market; correct?
A. I have not defined any kind of market like that.
Q. Now, you've also, in your testimony here today, you've cited to some evidence to estimate general search ad spending through SEM tools; is that right?
A. Some of my testimony was about that, correct.
Q. Okay. Can we put up slide 73 from Professor Baker's slides? I know these are partially redacted. But if you can pull that up in your binder so you can see the numbers. Just
let me know when you're there.
A. I've found it. I think the Court has as well.
Q. All right. So slide 73, again just to orient everybody, the top portion of the chart here sets forth the total general search ads market and then also the volume of search ad revenue that, according to your calculations, are purchased using, quote unquote, major SEM tools; is that right?
A. Yes.
Q. Okay. And the red box, the blank -- it says on the screen that's public, it's got a black box, and it says, "Of general search and revenue on Google and Bing comes through a major SEM tool."

You're calculating there a percentage, basically taking the bottom number, the general search ad revenue, over the top number, which is the general search ads revenue; is that right? A. Well, it's not the bottom. It's the second row. Q. I'm sorry. It's the bottom of the top row. Is that right? A. The number in the second row divided by the number in the top row.
Q. And that is -- according to you, that's the percentage of general search ads that are purchased using a major -- or the amount of Google and Bing search ads purchased using a major SEM tool?
A. Yes. It's Google and Bing solely on this slide.
Q. Okay. And how did you define "major SEM tool"?
A. As the four that were listed on the left.
Q. Okay. And did you do anything to assess sort of what the rest of the SEM tool market comprised?
A. I remember learning something about that when $I$ wrote my initial report, but I don't recall what $I$ knew or --
Q. Okay. So the number in the upper right there in that -- in the red box there, if we were counting everything, that number would be at least a little bit lower; right?
A. By counting everything, if you meant --
Q. All the SEM tools.
A. -- counting all the SEM tools rather than what $I$ call the major SEM tools?
Q. That's right.
A. That figure that's redacted would be a little -- presumably a little bit lower.
Q. Would be lower? Okay.

But just for sake of argument here today, using the number you use there, if we then turn to the second -- the bottom part of the chart where you lay out some market shares according to your calculations for the various SEM tool providers there.
A. Can I quibble with that? They're not market shares because I didn't define a market.
Q. Shares.
A. Yes.
Q. Fair point. The shares of each of these SEM tool
providers, of Google and Bing general search spend from those major SEM tool providers, if we take the SA360 number there and we take that percentage and we multiply it by the number in the upper right -- are you with me?
A. The number in the little box in the corner?
Q. Yeah, the one that we were just looking at there.
A. Yes.
Q. If we multiply those two numbers together, that would give us sort of, again, a rough ballpark of the percentage of spend, Google and Bing general search ad spend that goes through SA360; right?
A. Correct.
Q. Okay. And can we both agree -- again, we can't get into the specific number here, and I'm not asking you to do the math on the fly, but the math's not that hard -- that that math would suggest that the volume of spend going through SA360 for Google and Bing is a small minority of the spend in the market; correct?
A. The number is knowable, but let's see. It's in the ballpark -- the percentage, if you multiply it out, as an approximate number, $I$ would say it's in the ballpark of the number for the -- for Skai for 2018.
Q. Right.
A. Within a couple of percentage points.
Q. That's right. I've done the math, and you are -- we are in
the same neighborhood there. Okay.
And that's a relatively -- that is a small minority percentage of the total market; correct?
A. It is what it is. I mean, small minority? I don't know. But it's a minority, and it's not -- it's not -- I don't know. Using words to characterize it is harder than just using the numbers.
Q. Okay. So what we know there from doing that little math there is that if we take 100 minus that number we just did the math to get to --
A. Yes.
Q. -- the number we get to, that represents ad spend, the percentage of ad spend that the total market spend that goes through a channel other than SA360; right?
A. Yes.
Q. Okay. And advertisers have that channel to buy as much Microsoft Ads as they want; correct?
A. They can buy Microsoft Ads, I think, through all the channels.
Q. So my point is, if they're not happy with whatever array of tools or features or things that are available for Microsoft and SA360, they have ample other channels to purchase Microsoft Ads; correct?
A. They have options, and they have -- and then we've talked about switching costs. But with that caveat, yes.
Q. Okay. During the time period that you examined in this case, is it the case that prices charged by SEM tool providers actually decreased?
A. I have the impression I've seen anecdotal information about that, but I'm not sure what it said or whether that's true. So I guess I don't know.
Q. You haven't done any analysis in this case of the extent of price competition that occurred during this time period among SEM tool providers; is that right?
A. I've seen some things about that, but I did not analyze any sort of SEM tool market. So I didn't systematically look at anything like that.
Q. Okay. If you'll go to -- if we can turn to slide 74, can you again just reorient us -- we've been through a lot of slides here today. Can you just reorient the Court again today as to what this slide depicts?
A. So this is a -- what share -- the top line shows for each year the percentage of Bing's general search ad revenue that comes through SA360.

And then the second line shows the percentage of its SEM tool revenue, I believe, that comes through SA360.
Q. Okay. And the conduct that you've talked about in this case having to do with various Microsoft features, when did that conduct originate?
A. Well, that's what we were discussing in connection with the
benchmarks. One benchmark is that the delay for auction-time bidding has been three and a half years from today.
Q. The original -- when did Microsoft make the original ask in this case for various features?
A. I remember -- I don't know the original. I don't recall a date for an original request, but $I$ do recall substantial -that there was a substantial conversation between Microsoft and Google about that that was in late -- I've got to look at my chronology. Was it an earlier slide or was it later? Let's see.

THE COURT: Why don't you go ahead and give him the date. I think we know what it is.

BY MR. SCHMIDTLEIN:
Q. It's 2019, isn't it, when there were first conversations between Google and Microsoft?
A. That's right, late 2019. If my benchmark was early 2020, which is what I'm remembering, that would have been late 2019. That's what I'm remembering a substantial conversation. I have no idea whether it was the first.
Q. And over this time period that you've looked at here, we see Microsoft Ad spend growing on SA360; correct?
A. You mean in share of -- yes, of its total, yes, that's correct.
Q. And Microsoft's share of ads on SEM tools is growing, too; correct?
A. Yes.
Q. And this would suggest to you that sort of the SEM tool market is performing competitively in terms of offering Microsoft a viable channel to have search ads purchased; correct?
A. I don't think it suggests anything about competition, but it does indicate that it's a viable channel for advertisers.
Q. Advertisers are effectively using SEM tools to buy Microsoft Ads over this period; correct?
A. Many advertisers and much advertising revenue to Microsoft is coming through SEM tools.
Q. Do you have an opinion in this case of whether advertisers -- and you can take that down -- whether advertisers view Bing as a substitute for Google Search for their advertisements?
A. It could be a complement, or it could be a substitute. I don't think I have a -- you know, it could be both.

So the answer is, it is a substitute. They do view it as a substitute, but some will also view it as a complement.
Q. Have you done any analysis in this case to assess what percentage of advertisers view Bing as a substitute versus a complement to Google Search?
A. No, but I know that they are rivals in advertising. So, you know, I've analyzed it to be able to say that, that many advertisers view them as substitutes. They are market
participants in that market.
Q. Do you have an opinion as to whether Bing users make up a different set of consumers as Google Search users?
A. I'm trying to recall if I've seen information on that, and I may have, but I don't have an opinion right now.
Q. You haven't done any analysis in this case to assess whether advertisers, when they are deciding whether and how much they want to spend on Bing, their concern is getting to a different and new audience as opposed to the same audience that they can reach on Google Ads; correct?
A. I have not analyzed that, that's correct.
Q. You're aware that at least some advertisers view Bing's ad platform as providing an additive consumer audience rather than a substitute consumer audience?
A. So I had that impression, which is why I used that word "complement" before, but $I$ think it's both.
Q. Have you done any analysis in this case as to how advertisers who decide to advertise on both Google and Bing determine how to allocate their ad spend, what factors they look at?
A. I'm stumbling on your word "analysis," but I've seen discussions related to that, but I guess I would say I haven't done an analysis.
Q. Is there a particular percentage that is allocated between Google Ads and Bing Ads based on what you've seen in this case?
A. You mean for advertisers who have chosen to advertise on both?
Q. Correct.
A. It would vary by advertiser.
Q. So there's no typical allocation between Google and Microsoft; fair?
A. Not that $I$ know of.
Q. And have you done any analysis in this case to assess whether these decisions regarding allocations are driven by the relative ROI that they can achieve on one platform versus the other?
A. Was your question about analysis again?
Q. Yeah.
A. No. I've seen information about advertisers looking at ROI, but I haven't done an analysis.
Q. You haven't done any study in this case to assess the likelihood that if an advertiser sees an increase in ROI on Bing Ads, that they will move spend from Google Ads to Bing Ads, have you?
A. I've seen information indicating that advertisers would reach the same -- reach users at the same stage in the marketing funnel and be, you know, using both, and that they look at returns on investment, and it's -- in making their decisions. And the -- and that would tend to mean that some advertisers would want to do what you're suggesting. But I have not done an
analysis to evaluate how many and who and to what extent. Q. You haven't offered in your expert reports an example of a single incident where an advertiser experienced a spike in ROI on Microsoft Ads and that caused them to then move spend from Google Ads to Microsoft Ads; correct?
A. That's correct. My testimony was about how the more competitive advertising market that would make Bing or Yahoo!, et cetera, more attractive, that would make advertisers be more -- have a greater incentive to do that.
Q. And you've not done any analysis in this case of how advertisers decide whether they only want to advertise on Google Ads versus whether or when they want to multi-home and advertise on both Google and Bing; correct?
A. Only to the extent that advertisers who use SEM tools have opted into choosing a method of purchasing advertising that allows them to do both, suggesting that they have greater interest in doing that.

But beyond that, I have not done an analysis.
Q. No, I understand. We can all stipulate that there are some advertisers who decide to multi-home and advertise on both.

And my question to you is simply, have you reached an opinion as to what economic circumstances need to be present for that to occur?
A. Well, $I$ haven't analyzed it in any detail. But some of the factors that you have been raising here would be relevant to
that decision.
Q. You've not offered any opinion or seen any evidence in this case that there is some advertiser ROI benchmark for Bing Ads that advertisers are looking for before they decide to multi-home on Bing Ads; correct?
A. I haven't seen that explicitly, but I do know that many small advertisers find it uneconomic to advertise on more than one search firm platform, and -- because of the cost of setting it up, a second campaign, which is relevant to the calculus that you're proposing, but $I$ haven't seen a specific benchmark that I can recall.
Q. Now, you have not inspected or sort of looked at the two versions of auction-time bidding from Google and from Microsoft to assess whether they operate in a similar manner, have you?
A. I've seen a little bit of the information about that, but I haven't looked at them carefully, no.
Q. You have not done a study of ad performance with auction-time bidding for Google's native tools and compared that to auction-time bidding with Microsoft's native tools, have you? A. No, I have not.
Q. And you have not done any analysis or offered an opinion in this case as to whether Google's auction-time bidding functionality is more effective than Microsoft's auction-time bidding functionality; is that right?
A. That's correct.
Q. You just haven't studied either way which one is more effective than the other?
A. That's correct.
Q. And would you agree that complete feature parity amongst search engine advertising platforms does not exist within any SEM tool provider?
A. I believe that to be the case, but I don't know for sure.
Q. There is no SEM tool provider, whether it's SA360 or Skai
or Marin or Adobe, that has adopted all search ad features that are common across search ad platforms; correct?
A. That's consistent with some anecdotal things that I've seen, or maybe it's more than anecdotal. But I haven't -- I don't know systematically about all four in any way that $I$ could actually answer the question yes or no.
Q. And would you agree that from an economic perspective, SEM tool providers have to make hard decisions, given their limited resources, when deciding which features to add and how quickly to add them?
A. I agree that they have to make decisions on how to allocate the resources in deciding how to -- in deciding which features to add.
Q. And you would agree that it's reasonable for an SEM tool provider to want to see advertiser demand for a particular advertising platform's feature before the SEM tool decides to make the investment to build that new feature?
A. I agree it's reasonable for an SEM tool provider to want to anticipate whether there would be demand for the feature before deciding to advertise -- to adopt the feature. But that's not quite the same thing as seeing the demand, but have a reason to believe there would be demand, I would agree with.
Q. You understand that advertiser demand is an important factor that Google has for many years considered when deciding what functionality to incorporate into SA360?
A. I'm trying to recall whether I've seen that in testimony or not, but it is certainly plausible. I would accept that --
Q. Google's used that both when deciding whether to incorporate Google Ads features, as well as other search engine features; correct?
A. I wouldn't be surprised, but I don't recall the testimony. Q. Now, you've offered the opinion that at some point Google became aware that there was advertiser demand to use Microsoft Ads auction-time bidding functionality; is that right?
A. I talked about a survey that Google conducted.
Q. Okay. And that survey -- do you remember the date of that survey?
A. I could look, but I think it was 2020.
Q. If you would look at slide 86.
A. Yes, it was 2020.
Q. Is this the survey that you were thinking about?
A. Yes, that's correct.
Q. Okay. And this -- the date of this survey is May 8, 2020; is that right?
A. That's the date in the footnote. So that sounds correct.
Q. And is this the first time -- this is the first evidence you cite in your expert reports of Google learning about some sort of demand for auction-time -- Microsoft's auction-time bidding?
A. It's -- well, as $I$ sit here, it's the only one $I$ remember.
Q. Okay. And does this document that you reference in slide 86, does it identify a single United States customer that is demanding auction-time bidding?
A. I don't recall.
Q. You don't see any reference in the slide your counsel created to any United States customer, do you?
A. No.
Q. In fact, the only customer that's referenced in that slide is a Japanese customer, Rakuten; correct?
A. That's correct.
Q. And you're not aware of any auction-time bidding appearing on any prior Google customer surveys before this May 2021; correct?
A. I'm not aware of it, but I don't know one way or the other.
Q. If you had located one, you would have brought it to your counsel's attention for presentation today; correct?
A. That's likely, yes.
Q. Okay. Now, in your expert reports, you did not offer an opinion as to when Google should have begun building the auction-time bidding feature for Microsoft; correct?
A. That's correct, I did not. That's not -- yes, you're correct.
Q. Do you know how many advertising customers SA360 has?
A. I don't recall knowing that. No, at least right now, I don't.
Q. Do you recall it's in the tens of thousands?
A. That sounds plausible. It's consistent with those numbers about how many advertisers there are that we showed before. Q. You have not offered any opinion as to how many customers would need to express demand for a Microsoft Ads feature before it would be reasonable for Google to begin evaluating the feasibility and expense of adding that feature; correct?
A. I have no opinion about that. I would think they would care about who the customers are, whether they seem representative of other customers, and things like that. But I don't have an opinion on the number.
Q. Again, from an economic perspective, would you agree it would be reasonable for Google to want to see more than just a handful of customers demanding a feature before undertaking the costs of building that feature?
A. I think it would be reasonable for Google to think about what the demand for the services would be and whether -- and
it's possible that if they thought that the handful of customers they knew about were representative of others, maybe a handful would be enough.

So it's not clear to me that it would be unreasonable to see a handful of customers and make a forecast, but I really don't know what number would be reasonable.
Q. Okay. Did you evaluate in this case when you were putting together your timeline whether Google had other higher-priority features or other demands on its engineering teams when deciding the timing for beginning building auction-time bidding?
A. I've seen testimony to the effect that Google engineers were making decisions to prioritize some features over others during this period. I think that's what you're asking. Q. Okay. Are you familiar with something that within Google was referred to as Project Amalgam?
A. Yes, in a general way.
Q. And what is Project Amalgam?
A. I believe, and you can correct me if I'm wrong, that it was a project for taking the -- integrating the features of Google Ads into SA360 so that they would be immediately accessible by SA360 advertisers.

Am I close?
Q. Well, it depends on what your definition of "close" is. Would it be fair to say that Project Amalgam was building out an entirely new code base for SA360?
A. When you say that, I think that sounds right.
Q. And you're aware, based on your review of the evidence in this case, that Google was devoting a substantial amount of resources from its SA360 team to trying to build out and finish Project Amalgam at the same time Microsoft approached it with its demands for integration of various new features?
A. I believe they were going on at -- something like that at the same time, but I don't know exactly what time the Project Amalgam was going on.
Q. And you have not offered any opinions in this case about the absolute cost to Google of building auction-time bidding from Microsoft into SA360?
A. That's correct.
Q. And you have not offered an expert opinion in this case as to how long it should have taken Google to build and integrate Microsoft Ads auction-time bidding into SA360; correct?
A. That's technically correct. My opinion is about what might have -- I looked at a benchmark to suggest what would have been feasible with more competition, but it's not a -- it's not doing -- I forgot the precise words you used, but what you asked in the question, it's not that.
Q. When you wrote your expert reports in this case --
A. Yes.
Q. -- you did not write "it is my expert opinion that Google should have been able to build Microsoft's auction-time bidding
feature into SA360 by $X$ date"?
A. That's correct.
Q. And you did not offer an expert opinion in this case that Google should have been able to have built Microsoft auction-time bidding into SA360 in $X$ number of months?
A. You mean in a technical way? No, I did not.
Q. Now, we talked about some of the other companies that offer SEM tools in addition to Google. And I think the ones you've identified and we looked at before were Skai, Adobe, and Marin; correct?
A. Correct.
Q. And we talked a little bit about one way that you might -I think you used "benchmark" in some context, but one way that you might evaluate Google's conduct would be looking at what some of the other SEM tool providers did; correct?
A. One way that I might evaluate what more competition could have spurred Google to do was to look at a benchmark like that. Q. Well, in looking at whether it was reasonable and on what timeline it would be reasonable to adopt certain features, you might want to look at what other firms did?
A. Yes.
Q. Okay. And did Marin adopt -- has Marin adopted Microsoft's auction-time bidding into its third party --
A. I recall that Adobe has not, and I believe that Marin has in part, but that's my recollection.
Q. Marin hasn't adopted auction-time bidding full
functionality; correct?
A. That's what $I$ think, I recall.
Q. And Adobe has not adopted it?
A. I think that's correct.
Q. And Skai has adopted it?
A. Yes.
Q. Okay. Did you review any evidence or testimony in this case around when other SEM tool providers began to see any demand from their customers for Microsoft auction-time bidding?
A. I've seen testimony related to that, but I don't recall the details, no.
Q. Do you recall how long it took Skai to build auction-time bidding for Microsoft?
A. No.
Q. It took them --
A. I think I've known, but I don't recall it.
Q. It took them years; right?
A. I don't recall.
Q. Okay. Now, I believe you have also made reference, both in your reports and I think you may have made reference in the slides today, that there came a time when Google learned of two particular advertisers who expressed an interest in Microsoft's auction-time bidding.

Do you remember that?
A. Honestly, no, I don't, unless we're talking about the two who did the comparison that I alluded to before between how using Microsoft -- using SA360 to place ads on Microsoft and using Microsoft Ads to place ads on Microsoft. If it's those two customers, then yes, I do remember.
Q. Yes, I think we're talking about the same two.
A. Okay.
Q. Do you remember approximately what time those two advertisers appeared with the results of those tests?
A. Not now. It's likely in my report, but I don't recall now.
Q. Do you remember it was December of 2020?
A. No.
Q. Do you know what percentage of the ads market those two customers comprised?
A. In those two individually?
Q. Correct.
A. It's likely very small, but $I$ don't know.
Q. And you're not -- you haven't offered an opinion that based solely upon just those two customers' tests, that that by itself would have demanded or would have justified Google going ahead and integrating Microsoft Ads into SA360?
A. It would depend on whether those two customers -- whether Google thought that they were representative of lots of other customers or not. I didn't study that.
Q. You're certainly not offering an opinion that those two
customers are representative?
A. I don't have a view one way or the other.
Q. Okay. So I told you we would come back to switching costs.

So I want to talk a little bit about the switching costs.
There can be switching costs in a couple of different ways; right? You can be somebody who is using an SEM tool today and you want to switch to using a native tool, so there might be a switch involved there; right?
A. Yes.
Q. And then you could also be the other direction, using a native tool today and then you're switching to an SEM tool; correct?
A. One could switch to that direction, correct.
Q. And there's switching costs in that direction; right?
A. I didn't study that, but there may well be.
Q. Okay. And then there's switching costs if I'm on an SEM tool and I decide I'm going to also begin using -- or putting some ad spend on a second SEM tool; right?
A. Yes. I'm sorry. If you're going to move your spending from one SEM tool to another? Yes.
Q. Either moving all of it or a part of it to a second SEM tool, that could involve some switching costs; is that right? A. Yes.
Q. All of those different examples of switching costs, you have not done any analysis or study that has led you to offer an
expert opinion as to what the specific cost of switching in any of those scenarios is; is that right?
A. No quantitative number, if that's what you're asking.
Q. That's right.
A. I just characterized the switching costs of --
Q. You've identified --
A. What $I$ saw in the testimony.
Q. I'm sorry. I didn't mean to interrupt you.

You've identified that there's the fact of switching costs, but you've certainly not tried to quantify it?
A. I've not tried to quantify it, correct.
Q. And switching from -- just to be clear here, the native tools are free that these -- that all of these ad platforms offer; right?
A. Yes, I believe. I think that's correct.
Q. The SEM tools cost money?
A. You pay a commission for the SEM tool. You don't pay a commission to use the native tools. You just place your ad using the SEM tools. So in that sense, it's free.
Q. And you are aware of evidence in this case of advertisers that do switch SEM tool providers; right?
A. I'm aware that some advertisers have switched, yes.
Q. And have you performed any analysis in this case regarding the frequency with which advertisers have switched SEM tool providers?
A. No.
Q. Have you performed any analysis in this case assessing the frequency with which advertisers have added a second SEM tool provider?
A. No.
Q. You're aware of the testimony from Mr. Booth from Home Depot in this case; right?
A. Yes.
Q. And Mr. Booth is an example of an advertiser who added a second SEM tool provider; right?
A. That's correct.
Q. And one of the reasons he did so was to get -- to be able to take advantage of the Microsoft features that were not available on SA360; right?
A. I believe that's correct.
Q. And the fact that he was available to switch indicates that economically it was certainly feasible and rational for him to do so; right?
A. For him, yes. As I said, advertisers have very -- differ in their costs and benefits of doing different decisions. And that doesn't mean it's feasible for everyone. But yes, for him. Q. You haven't done any analysis in this case to assess whether Mr. Booth's experience is representative or unusual?
A. That's correct.
Q. If we can look at -- go back to slide 73. Focusing on the
share numbers in the lower half of your chart, would you agree that there's a fairly significant movement in share among the various SEM tool providers between 2016 and 2020 ?
A. So you're saying the shares have changed for several of them in nontrivial ways? That's correct.
Q. Again, to my eye, it looks like SA360, Skai, and Marin each have seen very significant changes in their share over this time period; is that fair?
A. Yes; in some sort of numerical sense, yes.
Q. Okay. And what does that tell you about advertisers moving their ad spend around and among different SEM tool providers?
A. Nothing without knowing whether the changes involve switching among tool providers or whether they involve advertisers, you know, deciding to adopt tools and then choosing to adopt the one that has the growing share, which would then make the denominator bigger and shrink everybody else's share.

So I would have to know more in order to have an opinion about the question you asked.
Q. You have not done any analysis to try to understand what the explanation is around all of these very significant share shifts; is that right?
A. Yes, I've not analyzed anything involving an SEM tool market or anything like that.
Q. Now, Professor Baker, you've not identified a single advertiser who during this period used SA360 and decided not to
spend more on Bing Ads as a result of any delayed adoption of auction-time bidding functionality; correct?
A. That's correct. My testimony reached the conclusion in a different way, my conclusion.
Q. Well, your testimony hasn't reached in any way an opinion identifying a single advertiser who is using SA360 and decided not to spend more money on Bing Ads as a result of auction-time bidding for Microsoft not being adopted sooner; correct?
A. It's a little bit complicated in your question, but I believe you're saying -- you're talking about whether there was any advertiser who would -- well, if the question was whether there's any advertiser who would have spent more on Microsoft had SA -- any SA360 advertiser would have spent more on ad volume if Microsoft had -- SA360 enabled the Microsoft features, like auction-time bidding we were talking about, the -- I haven't identified any specific advertiser who would have, but I have talked about the reasons why it's reasonable to expect that some would and explained why I got to that.
Q. I understand you've offered the hypothesis that advertisers would, but you haven't offered the evidence that any did? A. No, I think there's evidence. It's more than hypothesis, because there's evidence that advertisers value auction-time bidding on Microsoft, and including SA360 advertisers valuing it.

And then there's -- and it's reasonable to infer from that
that some would have advertised more on Microsoft had those features been available on SA360.

There's also the Microsoft analysis that came to a similar conclusion.
Q. We're going to get to that. But just so we're clear, you haven't identified by name a single advertiser who is an SA360 customer spending Google Ads, Bing Ads and decided not to -- you know, failed to move spend because of the lack of auction-time bidding?
A. That's correct. That's what I said a moment ago.
Q. And you've not identified a single advertiser who was only advertising on Google Ads but would have begun using SA360 to buy Microsoft Ads had SA360 adopted Microsoft auction-time bidding sooner; correct?
A. That's correct.
Q. And you have not offered any opinion in this case that if an advertiser had, in fact, spent more on Bing Ads, that spending would have come at the expense of Google Ads?
A. That's correct. It's plausible that some would have involved switching and some would have been incremental. And I haven't tried to allocate.
Q. And you've certainly not offered any opinion in this case that any lost Microsoft Ad spend on SA360 would have improved the quality of the Bing search engine; correct?
A. That's correct. My opinion was about the practices as a
whole and what would have happened in the but-for world absent them.
Q. Now, coming back to Skai, you've talked about how Skai adopted Microsoft's auction-time bidding functionality.

Did you do any investigation of whether on Skai the mix of ad spend between Google Ads and Microsoft Ads changed after Skai adopted auction-time bidding from Microsoft?
A. No.
Q. Did you conduct any analysis that would allow you to conclude that advertisers did, in fact, shift spend from Google Ads to Microsoft Ads on Skai's SEM tool due to the availability of auction-time bidding for Microsoft?
A. On Skai's tool? I was interested in SA360. I didn't consider that for Skai.
Q. You didn't do any analysis of SA360 advertiser spend to determine whether SA360 advertisers moved ad spend from Bing to Google Ads after SA360 adopted auction-time bidding for Google Ads; correct?
A. That's correct, I did not analyze that, except insofar as I critiqued Dr. Israel's analysis that was in that ballpark. Q. Correct. You're aware that there were internal Google documents that indicated that when Google looked at this question Google saw an increase in Google ad spend after auction-time bidding and also some increase in Microsoft Ad spend; correct?
A. I'm not remembering one way or the other. That sounds like the sort of thing, if it existed, I would have seen, but I don't recall.
Q. You don't recall what you were responding to Dr. Israel on -- on that point?
A. He did a data analysis. That's what I'm remembering. I think he found the reverse of what you just said, or at least my reworking of his found the reverse. It was something like that. Q. Okay. You've also -- did you look at the question or offer an opinion in this case that if SA360 had adopted auction-time bidding for Microsoft Ads sooner, that Microsoft would have won a search distribution agreement because of that?
A. I did not say that in my opinion.
Q. You certainly aren't suggesting that there's a correlation or a cause and effect that the failure for Google to adopt auction-time bidding has made it so that Microsoft during this 2019 to present has not been able to win a search distribution agreement?
A. I simply said that it would make it harder for Microsoft to win, but I didn't attribute any particular result in any particular bidding auction, I forget the term you used, to the failure to -- the not enabling Microsoft --
Q. You're not saying that if Google had immediately snapped its fingers and somehow magically adopted Microsoft auction-time bidding in SA360 in 2019, that sitting here today, Bing would be
the default search engine for the Safari browser on Apple?
A. No, I did not take that -- say that.
Q. Now, if SA360 doesn't respond to advertiser demand to adopt a functionality and features for other search ads' platforms and other SEM tool providers do, advertisers will switch; correct?
A. On the margin, that would give an advertiser a greater incentive to switch. But of course, they would have to overcome the switching costs.
Q. How long has Google operated SA360?
A. I guess since it acquired Doubleclick, but I don't remember the date. I think that's right.
Q. 2008?
A. I don't know. Is that right? Okay, 2008. I will accept your representation, Mr. Schmidtlein.
Q. Have you seen evidence that Google has operated SA360 in a manner that is decidedly different than DoubleClick in terms of the adoption of other search engines features?
A. I did not look at that. I have no idea.
Q. Aside from this dispute over the timing of the adoption of auction-time bidding, are you aware of any other disputes over adopting Microsoft's functionality for SA360 over the many years that Google has owned SA360?
A. I don't recall knowing anything one way or the other about that.
Q. Now, you've -- I think in some of your analyses that you
provided the Court today, you've presented different profitability assessments that Google -- or profitability that Google would stand to make -- profits they would stand to make, excuse me, by selling more Google Ads versus selling Microsoft Ads on SA360.

Do you recall that?
A. The analysis was of the average profit that Google as a whole would make if it sold a $\$ 100$ ad through SA360 and placed the ad -- and placed the ad on Google versus the profit if it sold the same ad through SA360 but the ad was placed on Bing. Q. Okay. And that is -- that is fundamentally an outgrowth of the fact that Google is vertically integrated in some sense here; right? Google owns Google Search Ads in addition to SA360, and Microsoft doesn't; right?
A. Google owns SA360 and Microsoft doesn't own SA360, that's correct. So when you look at the profits for Google as a whole, you include the profits for both businesses that Google operates. I think that's what you're asking, the SA360 business and the Google Ads business.
Q. Right. And that incentive, if you will, or that disparity in incentives based on the different profitability, that's existed ever since the DoubleClick acquisition; right?
A. Yes.
Q. I mean, there's nothing unique about 2019 to the present with respect to Google having, according to you, an incentive to
want to steer business to Google Ads as opposed to Microsoft Ads based on their relative profitability to Google?
A. Well, yes, but $I$ don't know the margins or -- in the past or that sort of thing. So I couldn't tell you what the bar chart looked like in the past. But in a general way, I believe you're correct.
Q. You don't disagree that over this entire time period it was always going to be more profitable for Google to have an ad on SA360 placed on Google Ads versus Microsoft Ads?
A. It seems highly likely to me, but $I$ don't know. I haven't analyzed that.
Q. And are you -- have you evaluated or considered whether Google has engaged in any of that conduct since 2008 up until 2019, this conduct of sort of delaying feature implementation?
A. I just evaluated the -- what I discussed here.
Q. Do you have a theory as to why Google would begin unreasonably adopting Microsoft features in 2019 and 2020, when it's under investigation by the Department of Justice and State Attorneys General, why they would start doing it then and they weren't doing it before?
A. I haven't tried to analyze that question.
Q. Have you done any analysis in this case to determine how search ads quality impacts user preferences for search engines? A. I think I've seen information about that, but I'm not -- I don't -- I don't think I've done an analysis in the way you --
well, $I$ think I've seen information about it. I guess I will stop there.
Q. Do users typically choose their search engine for the quality of the ads they're shown on the search engine?
A. I've seen information that would tend to suggest otherwise, but $I$ don't really know.
Q. Okay. You haven't offered any opinion or done any analysis in this case that suggests that there's been some diminution in Bing Ads quality as a result of the lack of auction-time bidding in SA360 that has caused users of Bing to stop using Bing?
A. Could you repeat that again, please?
Q. Sure. You've not done any analysis in this case -- well, let's break it down.

You have not done any analysis in this case that any delay in adopting auction-time bidding has, in fact, decreased Bing Ads quality?
A. I have not analyzed that question, that's correct.
Q. And you certainly haven't done any correlation or analysis in this case that tries to prove some relationship between Bing Ads quality and user preference or usage of the Bing search engine?
A. I've not analyzed the -- done some sort of analysis of data that would look at quality and preference, if that answers your question.
Q. Yeah. And you have not done any empirical analysis in this
case that reaches the conclusion that the delay in offering auction-time bidding in SA360 has led to an increase in search ad prices on Microsoft or Google -- Microsoft Ads or Google Ads; right?
A. I haven't analyzed the trends in prices.
Q. And you have not done any analysis in this case that demonstrates that any delay in providing Microsoft Ads features in SA360 has impacted the overall volume of search ads shown on either Google or on Bing; correct?
A. Well, I've explained why Google's conduct would tend to lead to higher prices than it would obtain in the but-for world, and when that happens, that would mean it would tend to lead -in the market as a whole, and that would mean it would tend to lead to lower output in the but-for world.

But I haven't attempted to quantitatively measure that, if that was the question.
Q. And you haven't looked -- for example, on Skai, where Microsoft auction-time bidding has been adopted, you haven't done any analysis to see if either ads prices or overall ads output has been impacted or has differed as a result of that implementation?
A. Yeah, we discussed that before. I have not done that kind of analysis.
Q. In making your evaluations in this case, did you look at how long it took Google to integrate auction-time bidding for

Google Ads into SA360?
A. I know I've seen information about that, but I don't remember now what I learned about it.
Q. That wasn't a factor that you considered as a part of your opinions in this case?
A. I knew about it when $I$ was writing my report. So in that sense, yes.
Q. Okay. But sitting here today, you don't know how long it took?
A. I don't remember. I think that's what you said was years a moment -- or a few minutes ago.
Q. Would you agree -- we've talked a little bit about benchmarks. Would you agree that looking at how long it took Google to integrate auction-time bidding for Google Ads into SA360 would be a potential factor that you should consider when evaluating the reasonableness of how long it takes -- it has taken to integrate Microsoft auction-time bidding into SA360?
A. Yes, it would be a relevant factor. But remember, Microsoft and Google introduced auction-time bidding in essentially the same year. So I'm not sure what it would -precisely what it would tell you, because -- and remember I reported on -- I pointed to Mr. Vallez's testimony that introducing one firm's auction-time bidding made it easier to introduce the other.

So I'm not sure what the standalone term that it took
either Google or Skai to introduce Microsoft -- Google's auction-time bidding would tell you about the feasibility of when Google can introduce Microsoft's auction-time bidding into SA360.
Q. If you will turn to slide 88. You actually -- you have not done any study or empirical analysis in this case to be able to offer an opinion that if auction-time bidding had been adopted sooner on SA360, that there would be less bidding for ads on Google Ads; correct?
A. Well, they're going that direction, but I have not studied whether it would be of any -- the magnitude of it or anything like that. And most of my opinion -- I mean, this is really about all the -- I'm sorry. All of Google's conduct here would tend to -- in reducing competition in the advertising markets would have tended to reduce ad prices -- I'm sorry, keep ad prices higher than they would have been in the but-for world. It's not just the SA360 context.
Q. Well, sir, this slide in your -- you're welcome to flip around. This slide is specifically included in the section of your slides that deal with SA360.
A. Yes, that's correct.
Q. But you have certainly not offered any opinion as to whether one auction, ten auctions, or 10 million auctions would be thinner if auction-time bidding for Microsoft had been adopted more quickly on SA360?
A. That's correct.
Q. If you will look at the next slide, and this is -- I think you made reference to this earlier, and I told you we would come back to this. These are some Microsoft documents that you relied upon as part of your opinions in this case?
A. I think it was mainly testimony, but it might have been documents, too. But yes.
Q. And there's a range there of ad spend -- or, I should say, revenue loss in a fairly wide range there.

Do you see that?
A. Yes.
Q. You have not done any independent analysis that allows you to offer an opinion about what revenue loss has occurred as a result of a failure to adopt auction-time bidding for Microsoft; correct?
A. That's correct.
Q. And can you tell me what methodology Microsoft adopted --
A. No.
Q. -- to come up with these numbers?
A. I don't know what Microsoft used, how Microsoft reached those conclusions.
Q. Do you know what data was used?
A. I don't know how they -- how they reached these -determined the numbers that are reported in this slide. Q. You don't know what group within Microsoft came up with
these numbers?
A. No, I don't.
Q. You literally saw these numbers on a piece of paper with no explanation of how they were calculated, what data was used, and who within Microsoft performed the analysis; correct?
A. It wasn't just literally seeing it on a piece of paper, but there was also testimony about it. But I did not learn more about how those numbers -- how Microsoft came up with those numbers.
Q. Is it your testimony here today, sir, that you viewed -- or you reviewed Microsoft witness testimony that explained how these numbers were calculated?
A. No, it was testimony about what Microsoft concluded.

That's my recollection, not how they -- not how they reached that conclusion.
Q. The people whose -- or the testimony you reviewed didn't have any firsthand knowledge of how these numbers were calculated; correct?
A. I don't recall. I don't remember now. It's whatever I cited at the bottom is what I looked at at the time.
Q. So did you do anything to validate the accuracy or validity of these numbers?
A. No. It's the other way around, that these numbers, you know, however imprecise they are, are consistent with my conclusion based on the other information I discussed, that the
revenue loss -- that this mattered to advertisers -- to Microsoft, that advertisers would have taken advantage of Microsoft's auction-time bidding -- SA360 advertisers would have taken advantage of Microsoft's auction-time bidding had it been available for them.
Q. These numbers are consistent with your opinion only if they're valid and accurate; correct?
A. Well, yes. They come from a company that has an ability to do an analysis that I couldn't do. But yes, those numbers would have to be -- if those numbers were wholly made up, they would not support my view.
Q. During the course of this case, you looked at a lot of Microsoft documents; correct?
A. Some, yes.
Q. You understood Microsoft was subpoenaed in this case; correct?
A. Yes.
Q. And Microsoft produced a lot of data in this case; correct? A. Yes.
Q. Did you ask your lawyers, Hey, Mr. Sallet, would you go get me the data that's behind these numbers I see in these e-mails so that I can evaluate the accuracy of them before I put them in my expert opinion?
A. I don't recall what $I$ did. I remember discussing this with counsel, but I don't recall what those conversations were or
whether I -- in other words, I don't recall whether I -MR. SALLET: Your Honor, the question, we don't object. The testimony --

COURT REPORTER: I need you to speak into a microphone.

THE COURT: That's fine. Let's move on. We have five minutes. Why don't we wrap this line of questioning up, and we will finish for the day.

BY MR. SCHMIDTLEIN:
Q. You had an interview -- during the course of the work on your report in this case, Microsoft made Mr. Parakhin available for you to be interviewed; correct?
A. Yes. Is that how far you pronounce his name?
Q. Parakhin? Did you ask him about these analyses?
A. No.
Q. During your telephone or video conference with him?
A. No.
Q. Do you know what percentage of total Microsoft Ad spend these numbers here that are redacted out comprise?
A. I calculated that, but I guess I can't say it, because it's -- the numbers are redacted.
Q. It's a small percentage, isn't it?
A. I don't know how to put it. How can $I$ characterize it? THE COURT: You can say the numbers. Go ahead. THE WITNESS: Sorry?

THE COURT: You can say the numbers. Go ahead.
THE WITNESS: What I recall is the high end of the range was something like 6-1/2 percent. That's what I'm remembering.

BY MR. SCHMIDTLEIN:
Q. And you know that this range here involves documents discussing various features, not just auction-time bidding; correct?
A. Yes, that's correct.
Q. In other words, these numbers here don't pertain solely to auction-time bidding?
A. That's correct.
Q. And you've not seen any number that isolates the impact on auction-time bidding; correct?
A. That's correct.

MR. SCHMIDTLEIN: Your Honor, I'm about to change topics.

THE COURT: All right. Professor, we're going to conclude for the day, and we will resume tomorrow at 9:30. So we will look forward to seeing you tomorrow, and I will just ask you not to discuss your testimony with anyone overnight.

THE WITNESS: All right.
THE COURT: You can step down and step out of the courtroom.

Okay. So tomorrow, what's our expectation in terms of
finishing up with Professor Baker and then going into Google's case?

MR. SCHMIDTLEIN: Your Honor, I expect to be done in an hour or less, and I think the States will close -- or they will rest their case, and we will call a fact witness from Google who will be testifying tomorrow, Mr. Prabhakar Raghavan.

THE COURT: Mr. Raghavan? And he will take the rest of the day?

MR. SCHMIDTLEIN: At the rate we're going, probably, unfortunately. We had hoped to get him -- we would very much like to complete him tomorrow. That had been, frankly, our intention. Our expectation had been that we were going to be done with Professor Baker today, but he has, I think, gone a little longer than we all anticipated.

THE COURT: Well, we started an hour late. That's on me.

MR. SCHMIDTLEIN: Anyway, I think the expectation is still to get Dr. Raghavan done tomorrow.

And then we have Professor Fox who can either start tomorrow or will hopefully be completed Friday, in a half a day. I don't think he should take more than half a day.

MR. SALLET: Just for sake of completeness, Your Honor, I may have a short redirect. I don't think it will be more than 20 minutes.

THE COURT: No, I figured as much.

So Dr. Raghavan, are you anticipating asking for a closed session with respect to Dr. Raghavan?

MR. SCHMIDTLEIN: I don't believe so, Your Honor.
THE COURT: Okay. Terrific. All right. So I think that takes us through tomorrow and into Friday.

Anything else we need to talk about?
MR. CAVANAUGH: Your Honor, we've been working with Google on pushing some additional exhibits for us. Here's a list.

There are many additional exhibits that we are continuing to negotiate with them, and then we will also have deposition transcripts. I thought we would have them done by today. I think there's one or two outstanding issues.

I assume, based on how the Court dealt with the United States closing their case, we can continue to introduce these things.

THE COURT: That's fine.
MR. CAVANAUGH: Thank you, Your Honor.
THE COURT: Okay. All right. So we will get the order out this evening with respect to public disclosure of exhibits. I had hoped to get it done sooner, but it just didn't happen because of certain health issues.

But in any event, we're ready to do it and will take care of that shortly after we adjourn here today. There have been some tweaks between the proposals the parties have made and the

Times has made. So just take a close look at that. Anything else?

MR. DINTZER: Not from the DOJ plaintiffs, Your Honor. MR. CAVANAUGH: No, Your Honor.

MR. SCHMIDTLEIN: No, Your Honor.
THE COURT: Terrific. Thanks, everyone. See you in
the morning.
(Proceedings adjourned at 5:01 p.m.)



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