IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, et al.,
Plaintiffs,

vs.

GOOGLE, LLC,

Defendant.
_____/

Civil Action
No. 1:20-cv-3010

Washington, DC
October 31, 2023
1:32 p.m.

Day 31
Afternoon Session

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

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P R O C E E D I N G S

THE COURT: Welcome back, everyone. Ready when you are, counsel.

CONTINUED DIRECT EXAMINATION OF BENEDICT GOMES

BY MR. SMURZYNSKI:

Q. Thank you, Your Honor.

Before the lunch break, Dr. Gomes, we were talking about the pivot to mobile?

A. Yes.

Q. And if we could put a slide up. What was different about the mobile experience as compared to desktop?

A. You know, almost everything was different about the experience, the phone in terms of how you interacted with it. The first thing was that it was a small device where it was hard to type. So unlike on a laptop you didn't have a keyboard, so input was difficult. So we have to think about how the ways in which we're going to make input easier for people to do so that they can actually like type in queries easily. So we worked on several things around that. We worked on things like autocomplete. We worked on increasing the amount of coverage we could get for autocomplete with new algorithms. We worked to bring spelling correction into autocomplete so that you can get a spelling correction as you're typing, not just after you've typed.

We also began to put a lot of energy into voice search

which connected to all of the research that we were doing on machine learning. And voice search was improving over time, but this -- it got a lot better at this point. You know, when I first started using voice search, there was one person on the team who could use it who had the perfect Midwestern accent. And I have this mixture of a British and Indian and whatnot accents, and I could never do the demos.

But by the end of it, I was once in a cab where a person with a much heavier accent than I did was using the phone. And he said -- I said: "It understands you?" He said: "Yes." He said: "People don't understand me, but Google does." And so we made a huge amount of progress there, but that's what we figured was necessary in order for people to actually be able to enter queries or they wouldn't do that on a phone, they could tap on other apps to get to -- as an alternative.

Q. So you mentioned voice search, and you also mentioned autocomplete. How is autocomplete important to the mobile experience, and getting that right important?

A. It was even more important, the mobile experience, because since typing was hard, if you -- it took you a long time to type and you tended to make more mistakes. So we had to actually make sure that your -- we had more coverage over queries, we had to have coverage over queries that we didn't have before. So we came up with something called tail

suggest which is queries that have never been typed in but are completions of the --

COURT REPORTER: I'm sorry, can you please slow down. Thank you.

THE WITNESS: Oh, sorry. We came up with a system called tail suggest which allowed you to enter in queries that had never been typed before, but we had a dot-dot-dot notation. It began to give you coverage over parts of the query stream that we didn't have before. And we came up with new algorithms for autocomplete, so the coverage of autocomplete increased over time. We also had to come up with keyboards.

So I studied Hindi in school for 10 years. And people are coming onto phones for the first time, and I don't know how to type Hindi, even though I studied it in school. People didn't have access to keyboards before that, because the phone was the first time they'd come across an interface they could use. So we came up with new keyboards even for these other languages.

Q. Let's advance the slide. What was this observation about in mobile?

A. The next thing is that you look at the results, and a mobile screen is small. If you think about a desktop screen, there's a lot of space on which to show a lot of different information. The screen is very small, and the pages are slow to load. So people have a small amount of real estate

which to like consume what they want. And they kind of want the answers quickly. So what we had to do is work on systems of answers. We had a system called featured snippets, or web answers, which we developed in order to actually begin to show in place the answers to quick queries. And you can go to the web page if you needed to, but if it was just a quick thing you needed, you could get the snippet right there.

Also using the knowledge graph, we could begin to answer queries, like what is the capital of France, from the knowledge graph. Because, you know, France is a country, it has a capital, the capital is Paris. And we can even begin to do follow-up queries around that, because we could use the knowledge graph with its billions of facts to answer a whole range of queries. And we begin to -- we began to make all kinds of other features within the result page, because the nature in which people were getting information today was changing -- at that point was changing. People were beginning to consume a lot more social networking information and -- like Facebook. And Facebook was little blocks of information that they used to scroll through that were really very visual. So people were beginning to expect a much more visual search experience, so we made our results much more visual. We brought in images into the results. We brought in structured snippets which would tell you things like star ratings and other things just within the snippet itself --

prices and so on, within the snippet itself.

So there were lots of features we added in order to make sure that the user could get as much information as they needed as quickly as possible. Because the pages are slow to load, people were hesitant initially -- I think it's hard to remember just how slow the web was -- sorry, just how slow the web was at that time. It took a long while when you clicked on a link to actually get the page. And so people were reluctant to do that unless they had to. And there was a lot of movement towards, well, the solution is apps, and everyone's going to tap on an app and they're going to get their answer right there. So that is what we had to compete against.

Q. We're used to mobile networks today. But in 2007, when Google first started working on mobile search in 2000, that early period, as we saw the very small portion of the query stream being on mobile, remind us, what was that experience? I mean, what was the -- what did you see when pages were trying to load on a screen in those days?

A. I mean, there's a lot of waiting. First of all, you typed in your query, and there's a lot of waiting. And you'd get the result page, and then when you tapped on the result, quite often you'd go to a page that was not formatted for the mobile screen. So it was a huge -- a large page, and you had to double tap or expand it out -- and sometimes you expanded

it too much. So it was really quite difficult to get the information you wanted. And so our goal was to try and figure out how do we evolve the search product to make it really usable on mobile, to actually serve that information need that users had.

Q. And there's a reference on the screen to search features. How did that interact with the mobile experience?

A. So we -- the term search features was used to refer to all of the different changes we made into the interface of search. Even things like universal search would be considered a search feature. Some of those things became a lot more important in mobile, because people were expecting sometimes more visual results in terms of images and videos. They were expecting to see results on the page that looked like little blocks, as they were used to on Facebook. So all of those things were things we were thinking about as to what should the interaction be like on mobile.

Q. And there's a reference there to web answers. What are web answers?

A. Web answers, the idea is that if you can look at a query and look at a result page that is about -- that may contain the answer, web answers might be able to pick out the section of the page that is very close to an answer to what you -- your query was. It was what we called featured snippets when we launched it. But the idea was to actually

answer as much as we could based on the query you had typed in.

Q. And why was working on web answers important to the mobile experience?

A. It was really important, because it was so slow to click on the page. So if you really needed more information, you could click on the page, but it was really important for you to get as much information as you could right up front. So we tried to provide you if it was just a brief fact you wanted, to get it right there. In terms -- we tried to do that also with things like sports scores. People are coming to be able to find the sports score, and we had to provide that right there. So we had to license data for things like sports or for stock tickers and a whole bunch of things of that sort. We paid a lot more attention to licensing that kind of information so that you could provide that information right there in the moment so that they didn't have to go someplace else. If you wanted to find out the details of how the game was played, well, it was fine then to go to another site. But if you just wanted the score, we could license that information and provide it to you.

THE COURT: Sorry to interrupt, if I can ask a question. You've referenced a number of times how users felt or what the user experience was. How, at a high level, does Google get that feedback from users to reach those types of

conclusions?

THE WITNESS: So we do a lot of user studies. We have a user experience group that actually has -- that does studies in labs, sometimes where a person is doing those kinds of queries on a device. And we'll -- and to try and understand exactly how users are interacting with the device. So at that point, you can also ask some questions of like what was difficult, what wasn't, and come to a better understanding of what's happening. And we did -- we typically do these also in many places in the world, because experience might be different.

THE COURT: Okay, thank you.

BY MR. SMURZYNSKI:

Q. Let's advance one more. What's this observation: "The phone is with you everywhere"?

A. So unlike your laptop or your desktop -- and desktop computers, the phone is in your pocket -- is beginning to be a computer that's with you everywhere which means that your expectations of the answers it gives you are beginning to change. You're beginning to expect to find answers that are near you. So if I'm searching, I don't know, for a restaurant, I'm expecting to find not necessarily the best restaurants in my city, but the restaurants that might be on the street that I'm on, if I'm looking for a restaurant right there. I may not be looking for the home page of a company,

I might be looking for the local version -- the local instance of that company. So there are many ways in which local information begins to really matter. So we invested even more in getting a comprehensive catalog of local businesses that we could surface in these cases, and making sure that they ranked appropriately in these cases. Even within ranking, making sure that you're getting localized information, because we know where the phone is, if you give us that information. And so we can give you information that's relevant to you very locally; like, for instance, the town you live in, not just the general area.

Q. Let's roll forward again. There's an observation that many users were mobile-centric or becoming mobile-centric. What do you mean by that?

MR. DAHLQUIST: Same objection to leading, Your Honor. Now he's putting the screen up and prompting him.

BY MR. SMURZYNSKI:

Q. Dr. Gomes, were you involved in the creation of these demonstratives?

A. Yes.

Q. What is this observation?

A. So the other thing that's happening here is people are coming online for the first time in many countries who have never seen a desktop or a laptop before. The phone is the first device that they have. And so their main

attraction is with the phone. They're not used to necessarily thinking about the web, they're thinking about the apps they have on their phone. In some places like Africa, the internet became Facebook, because that was most of the content that people saw. And even in the -- in countries like the U.S., a lot -- people are spending a huge amount of time on social networking apps like Facebook. And a huge amount of content creation was happening there as well as content consumption.

So it was a question of people were seeing that as the natural way to interact with a phone versus dealing with the open web, which had a lot of challenges at the time. The pages were not necessarily fast, they were not necessarily mobile friendly. Whereas many of these platforms had pages that were fast and mobile friendly, and we had to bridge that divide. So we had to figure out how to make -- deal with a world where we could make sure that the open web and our product was mobile friendly.

Q. And I don't know if you could advance it, there's a reference there to more visual image search. What are you addressing there?

A. Yeah, so as I was saying, with the phone, and with services like Facebook -- and I guess Twitter and so on, whenever that came about, there were -- people were used to seeing a much more visual interface and lots more images.

And the people who were coming online were just getting used that presentation. Visual images also are processed very quickly by the brain. So if we can provide that kind of visual imagery, it actually is a really fast way to process your results. But it has its challenges: How do you pick the right image from a page; how do you make sure that it's relevant to the -- it also tends to slow down the page. So lots of challenges in making sure that this works well.

So we had to -- we were trying to make sure that our results became more visual -- and we thought of it as more modern in that sense -- compared to how the phone was evolving, and pushing the web, to some extent, in that direction. Translation became another important thing, because, again, people are coming online in webs that did not have much English content or major language content. So for instance, we had a huge number of people coming online in Hindi who had never -- and there was not almost any -- no Hindi content on the web. So could we use translation to bring English language content to people who didn't speak -- who weren't speaking a language that, you know, didn't have much content.

So we began efforts like translating English Wikipedia into other languages. It's tricky to get it right, because sometimes there's low quality content in that language versus high quality content in English, but your translation may not

be as good. So you have to work this through until your translation is really good. And we used machine -- machine learning was coming into real force at that time, and translation was beginning to, again, work really well.

Q. And then there's a reference there to scrollable-swipeable content. What was --

A. Yeah, so there's --

Q. -- happening with that in the mobile environment?

A. Yeah, so there's a different kind of interaction with a phone where you're actually -- it's easy to scroll, so you can go through many pages of text there, but there's not much screen real estate sideways unless you swipe. So there are ways to take advantage of this in our user interface design, and we were thinking of all kinds of different ways to take advantage of this. Because you've got this disadvantage that your screen is so small, but you've got an advantage that people can scroll in both directions quite easily.

So how do you construct the page to take advantage of that, especially in a product that people are somewhat familiar with on the desktop, and they expect it to work a certain way. So we were trying to evolve the product to actually make that become -- to take advantage of those facts; so take advantage of the scrollability and the swipeability. Many of our carousels -- what we called carousels, became swipeable for images, for videos, for lots

of things that we were showing.

Q. And then the next point here: "The ecosystem needs to evolve," what did you mean by that?

A. So, we depend on the open web and the open web ecosystem. Places like Facebook are creating their own ecosystem. So for us, in order for us to do -- to serve our users' needs, the information we have access to is on the web. If the web is not in a good place, we are not in a good place. So we needed to make sure that the web was evolving, and we started talking to webmasters about the ways in which they needed to improve their sites. We were paying attention to this far before anybody else -- other people were, because even though it was a small fraction of our traffic, we believed this was going to be the future. Whereas many websites were saying, well, this is not a big fraction of my traffic, why do I need to care.

And so we were trying to evangelize the fact that this is something that -- where the future's heading, please pay attention to it. So we did a couple of things. We encouraged websites to have mobile-friendly pages, and we said we'll give you a slight ranking boost if you do that. And we also encouraged them to have fast loading pages, and said, again, we'll give you a slight ranking boost if you do that. Because we wanted to encourage their ecosystem to actually move towards this mobile world. We were really --

it was really critical for us that the whole web evolve, not just us.

Q. You mentioned some ranking incentives, if you will, or prioritization. Were there other efforts that Google undertook to help the web ecosystem become a more mobile-friendly place?

A. Well, we actually tried to create infrastructure that other people could use. I was not involved in the details of that, but there were teams working on making sure that the web infrastructure was actually improving and advancing. We created some tools of our own. So there were many things we were trying to do in the space to push that forward to make the web just much faster and more usable on a phone.

Q. And with respect to these important differences in the mobile experience in Google's reactions, how significant, if at all, was a large volume of mobile queries to causing these innovations?

A. I mean, this was happening at a time when our traffic was -- the mobile traffic was a small fraction of our web traffic. So this was largely driven by our ideas about what we wanted to do. Some of these ideas may have used some amount of click data or query data, but many of them, like local search, it was a matter of collecting all that information from places around the world. Localization of ranking was a matter of using the ranking -- the local signal

coming from the phone, and figuring out what does that mean for your results. The knowledge graph is a matter of bringing all the data from all these sites together.

So voice search is, again, a matter of, like, doing the machine learning improvements in order to make those -- make voice search work; and likewise with translation. So a lot of this was based on, like, basic ideas we had to improve this interface with search.

Q. How would you, from the standpoint of today, view Google's pivot to mobile, was it a success?

A. I believe so. I believe so. I think we put a lot of effort into it, and I think it worked. It was not obvious at the time, but it worked.

Q. How would you describe the competitive landscape that Google faced, particularly in mobile?

A. I think, at that time, the competitive landscape -- well, there were other search engines, but the competitive landscape was changing to be a whole collection of apps. So the phone was just one tap, you could go to your browser. But there's also a whole slew of other apps you could go to to satisfy the same information needs. So if you think about it, our goal is to satisfy your information need. There are lots of places you can go. Facebook was providing information about -- it had forums on every topic. There were places like Amazon. There were places -- there were

places for ordering food. There were places -- there were places for every different kind of thing -- information need you might have. And sometimes we could satisfy it in more depth than we could with a dedicated app.

So we had to compete with that whole ecosystem of apps. And the slogan at the time was: "There's an app for that." So we had to make sure that the open web actually stayed a viable contender for your information needs; not just us, but the open web as a whole was a viable contender versus these closed ecosystems like Facebook and so on that were also growing dramatically at this time.

MR. SMURZYNSKI: Thank you, Dr. Gomes. I have no further questions.

Your Honor, I'd move the demonstrative DXD27 in the same fashion that we've done with the other demonstratives.

MR. DAHLQUIST: If it's just for demonstrative purposes, we have no objection.

THE COURT: It will be admitted for that purpose.

(Exhibit DXD27 admitted into evidence)

CROSS-EXAMINATION OF BENEDICT GOMES

BY MR. DAHLQUIST:

Q. Good afternoon, Dr. Gomes.

A. Good afternoon.

Q. Do you prefer to be called Dr. Gomes or Mr. Gomes?

A. Anything works.

Q. Well, you did the hard work, I'll call you Dr. Gomes. Dr. Gomes, my name is David Dahlquist. I represent the United States Department of Justice, and I'd like to ask you some more questions based on what your counsel asked you today as well as some documents that you've written during your time at Google.

Just to clarify a few points, you started in Google in 1999, correct?

A. Yes.

Q. And when did you become -- I guess I want to understand your role. You worked in the search group at Google your entire time prior to your most recent promotion into the Google Classroom type of work, correct?

A. Into learning education sustainability, yeah.

Q. So from 1999 until about 2020, you worked on Google search, correct?

A. Yes.

Q. And around 2016, I believe you said you became a VP of the core -- I just want to make sure I understand your testimony. If you could repeat that for me.

A. Yeah, I became VP of the core search team, which was a portion -- a large -- some large chunk of the search team.

Q. So you became VP of core search in 2016?

A. Yes.

Q. And 2017, you became the SVP of all search, correct?

A. I think it was '18.

Q. 2018 you became the SVP of all search, correct?

A. I think my title was initially VP, I became SVP a bit later. The title changed not at exactly the same time.

Q. And so from 2018 until 2020, you served as the SVP of search?

A. Roughly, yes.

Q. Great. The current head of search at Google is Dr. Raghavan, correct?

A. Yes.

Q. He was your successor --

A. Yes.

Q. -- after you left --

A. Well --

Q. -- in 2012?

A. -- he leads search as well as other parts of the company.

Q. Correct. He currently has the title head of search, but there are other departments that were rolled underneath him as well, correct?

A. I believe his title is knowledge and information.

Q. You took over the role of head of search from Mr. Giannandrea, correct?

A. His role was also a bit different, he was running both research and search.

Q. And Mr. Giannandrea is currently employed at Apple, correct?

A. Yes.

Q. When you were head of search at Google, who did you report directly to, Mr. Pichai?

A. Yes.

Q. I'd like to ask you a couple of questions about the demonstrative that your counsel went over with you. And I believe you said you had a role in preparing these demonstratives; is that correct?

A. Yes.

Q. And that was in preparing for your testimony at your counsel's office, I presume?

A. Yes.

Q. Approximately how many hours did you spend preparing for your testimony today?

A. Today --

Q. Not today, sorry. In total, how much time did you spend preparing for your testimony in court?

A. I don't actually -- I've not accounted for it.

Q. More than 20 hours?

A. I don't think so.

Q. Less than 20 hours? More than --

A. I actually don't have any memory of how much time, I'd have to add it up.

Q. You don't recall how much time you spent preparing for your testimony today?

A. I don't have a concrete number to offer you.

Q. What's your best guess?

A. Maybe 10, 15 hours, I don't know.

Q. Thank you, sir. If you could turn to -- we don't need to put these on the screen, I just want to ask you about page four, which was sort of your listing of all the innovations, I believe, you talked about --

A. I mean, this -- by the way, that time was over previous depositions and all as well.

Q. Thank you. Looking at DDX27.004, which the title is just Key Early Innovations, you see there's the list of the six innovations you walked through with your counsel?

A. Yes, one second. Yes. Yeah.

Q. I'd just like to ask you -- I want to make sure we're clear on the dates. The first one you had is page rank?

A. Yeah.

Q. Page rank was launched around 1999; is that correct?

A. It was something they were experimenting with I think even before that, '98, '99.

Q. So '98, '99 is when page link was --

A. Yeah, it --

Q. -- or page rank was --

A. -- continued to evolve. What was called page rank

externally was something that evolved and had many algorithmic iterations over time. Because as the web got larger, you needed to change what the algorithm did in order to be able to do the computation.

Q. Is the algorithm that runs page rank still running today?

A. You'd have to ask Pandu about that. Some version of it, I'm sure, is.

Q. The next innovation you had was spelling. Approximately when did the spelling innovation come into Google?

A. I think 2001 or so. 2000, 2001.

Q. And is the spelling innovation still running at Google today?

A. Yes.

Q. Next is synonyms was around, I think you said, early 2000s?

A. '03, '04 maybe, I don't know. I don't remember that date exactly, somewhere in that timeframe.

Q. And that synonym algorithm is still running today?

A. It is not an algorithm, it was -- that was the very beginning of it. It was just beginning to have an effect, and it just grew and grew. And now there are many more -- much more complex systems than what were there. So it's not really accurate to say it's the same algorithm, it's quite

different.

Q. It's evolved --

A. It's evolved --

Q. -- since its --

A. -- yeah.

Q. -- launch in 20 --

A. Yeah, yeah.

Q. -- 2003?

A. Yeah.

Q. Autocomplete, approximately what year was that one?

A. I think it was 2006 or 7, somewhere there.

Q. Universal search, I believe, you said --

A. Around roughly --

Q. -- was around --

A. -- the same time.

Q. I'm sorry, I didn't --

A. Roughly the same time, I think.

COURT REPORTER: I'm sorry, but --

THE WITNESS: Sorry, my fault.

COURT REPORTER: -- if you'd like a record, you need to speak one at a time. Thank you.

THE WITNESS: My apologies.

BY MR. DAHLQUIST:

Q. Doctor, I will do my best to not interrupt you, and wait for a question and then I'll wait for an answer, how

about that.

Dr. Gomes, universal search, I believe you said, was around --

A. 2007, yes.

Q. And the knowledge graph, I believe you said, was around 2012 --

A. Yes.

Q. -- correct? Now, out of all these innovations, I believe Judge Mehta asked you a question about user feedback, correct, do you remember that --

A. Yes.

Q. -- question the Court asked you? The spelling, synonyms and autocomplete, each of those innovations, they relate to user queries, correct?

A. Spelling's -- yes, they do use user queries, but spelling in particular relies a lot -- more on the documents, because it's trying to get the correct spelling from the documents. Synonyms --

Q. Each of --

A. -- also uses the documents, yes.

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

A. Yes.

Q. We're going to move to a different topic. Oh,

actually staying on this topic. You agree that having click and query data helps Google or any search engine to deliver better search results, correct?

A. Yes.

Q. And you agree that there's a relationship between a search engine having more user queries and having better quality, correct?

A. To a point.

Q. Having more queries helps with ranking search results, correct?

A. All of these signals are valuable up to a point. They begin to have diminishing returns beyond a certain point. There are a bunch of signals that go into ranking. Each of those has a value, but the value begins to diminish beyond a certain point.

Q. Sir, let me ask my question again. You agree that having more queries helps with ranking search results, correct?

A. Like I said, to a point. It's not infinite, the benefit.

Q. Your Honor, if I may approach.

Dr. Gomes, you were deposed in this matter on, I think, two occasions, if you recall: September 24th, 2020 and December 10, 2021. Do you --

A. Yes.

Q. -- recall that? We may reference this on a few occasions today, so I just handed you a binder with both depositions in them. And I'll try to reference which one we're going to look at. Right now, if you could please look at your deposition from September 24th, 2020, which should be in your binder. And if you could turn to page 115, we're going to look at lines 10 through 15. Let me know when you're there and I'll ask you a question. But if you could just -- are you at page 115 --

A. Yes.

Q. -- in your September 24th, 2020 deposition?

A. Yeah.

Q. Sir, on September 24th, 2020, were you asked the following question and did you give the following answer:

"Question: Okay. But there is a relationship between more users and search quality?"

"Answer: Some number of users provided -- having some number of users provides us with queries as well as clicks that are useful in ranking."

A. Yes.

Q. Were you asked that question, and did you give that answer?

A. Yes.

Q. Thank you. You can close your deposition. So you agree that queries are useful to help understand user needs

and evaluate search results, correct?

A. Yes.

Q. Clicks are also useful for determining what the interest of users are, correct?

A. They are useful, yes.

Q. Now, this Court has heard a lot of testimony about diminishing returns, which I think was a concept you were just trying to illuminate a moment ago.

Let me ask you this: As the former head of search at Google, you don't recall ever having looked at the question of when diminishing return sets in, correct?

A. I think we've looked at --

Q. Sir, I'm sorry, this is a yes-or-no question. If you can answer my question yes or no -- and I'll repeat it.

MR. SMURZYNSKI: Your Honor, I object to this attempt to prevent the witness from answering the question, even badgering him in this fashion.

THE COURT: I agree. Let him respond, and --

MR. DAHLQUIST: Certainly.

THE COURT: -- if his response is not satisfactory, you can follow up.

BY MR. DAHLQUIST:

Q. Thank you. I can re-ask my question, if you'd like. As the former head of search at Google, you don't recall ever looking at the question of when diminishing return sets in,

correct? Please.

A. I would not know the details of that. If anybody had looked at it, Pandu would have looked at it.

Q. I'm sorry, you don't know the details of when diminishing returns would set in, correct?

A. No.

Q. But you don't recall having looked into it; is that your testimony?

A. No, I don't recall in particular, no.

Q. So during your whole time at search from 1999 to the time that you turned over the role in 2020, you don't recall having looked at the idea of diminishing returns at search, correct?

A. This is something that Pandu would have looked at more than me.

Q. Thank you, sir.

THE COURT: And just to be clear, you're referring to Dr. Nayak?

THE WITNESS: Yes.

BY MR. DAHLQUIST:

Q. Thank you, Your Honor.

You talked in your direct examination about competition with search. Do you recall some of that testimony?

A. You can refresh my memory.

Q. I'm sorry, not your deposition --

A. There was 16 hours of testimony.

Q. That was my misspeak. In your testimony today from your counsel --

A. Yes.

Q. -- you talked about some of the competition?

A. Yeah.

Q. I'd like to ask you some more questions about that. You agree that Google is a general search engine, correct?

A. Yes.

Q. And a general search engine is one that attempts to answer all queries, correct?

A. Yes.

Q. Companies that offer general search engine services similar to Google today include Bing, Yahoo! and DuckDuckGo, correct?

A. I think there are other companies that serve general information needs or can, like Facebook, that also have like a large collection of information that can serve pretty much any information need, from local information to information about hobbies to all that -- that kind of information is available on Facebook. And there's a bunch of that information that we don't have access to, and there's a bunch of information on the web that they have access to but may choose not to.

Q. We're going to get to some more general information

providers in a second, but let me re-ask my question.

Companies that offer general search engine services similar to Google today include Bing, Yahoo! and DuckDuckGo, correct?

A. They do include those, yes.

Q. And among the general search engines, Bing's largest competitor -- let me strike the question.

Among general search engines, Google's largest competitor is Bing today, correct?

A. Yes.

Q. You believe that Apple has the resources to develop a competing search engine, correct?

A. I assume so. I would not know.

Q. Let me re-ask my question. You believe, it's your belief that Apple has the resources to develop a competing search engine?

A. You would have to ask them.

Q. If I could ask you to open your deposition again to September 24, 2020, and we're going to turn to page 157. So September 24, 2020, page 157, lines two through four. Let me know when you're there.

A. Yes.

Q. On September 24, were you asked the following question, and did you give the following answer:

"Question: Do you think Apple could develop a competing

general search engine?"

"Answer: They have the resources to do it."

Were you asked that question, and did you give that answer?

A. Yes.

Q. Thank you, sir. You can close the deposition. While you were the head of search, Apple was recruiting employees from Google search, correct?

A. Yes.

Q. And, in fact, they even -- they recruited your predecessor Mr. Giannandrea, correct?

A. Yes.

Q. You believed that Apple was hiring people from Google search, because Apple was interested in building out its search-related products, correct?

A. I can't be sure what they're recruiting them for, I didn't have a chance to talk to them after they -- on the topic after they left, but anything's possible.

Q. After Mr. Giannandrea left, I believe you two had dinner?

A. We had dinner, yes. We didn't talk about work, though.

Q. And you're aware that Apple had been recruiting people from your group at search?

A. Yes.

Q. And, in fact, I believe the Court has heard testimony Mr. Pichai even asked to be informed when people were recruited away from Google search to Apple, correct?

A. Perhaps, yes.

Q. You answered a question a moment ago about some other internet providers or sites that provide additional information of broader resources.

Are you familiar with the term SVP, or specialized vertical providers?

A. Actually, I heard it recently. It's not the term that I normally have used --

Q. What's a --

A. -- yes.

Q. -- term that you would normally use to talk about these other types of --

A. I tend --

Q. -- broader information? Sorry.

A. I mean, I tend to think of them in terms of the particular information they provide.

Q. Some of those would be Amazon, Facebook and some others?

A. Yeah.

Q. Okay. I'd like to ask you some questions about those. You agree that Google provides broader information interests than Amazon, correct?

A. Than Amazon, yes.

Q. And Bing also serves broader information interests than Amazon, correct?

A. Yes.

Q. And Google's search engine covers more categories of information than Amazon's search engine, correct?

A. Yes.

Q. Amazon almost exclusively is focused on commercial information, correct?

A. Yes. Alexa, their product, is focused on something much broader than that.

Q. A search on Amazon will only return products that are for sale within the Amazon universe, correct?

A. As far as I know.

Q. And an Amazon search generally does not provide information that is not commercial in nature, correct? Let me give you a better --

A. I'm not an expert on Amazon search.

Q. Understood. Based on your knowledge and information, Amazon generally does not provide information that is responsive to non-commercial queries, correct?

A. Again, I'm not an expert on Amazon search, yeah.

Q. You can't search for a plumber on Amazon?

A. I've never tried.

Q. But you could do that on Google?

A. Yes.

Q. Expedia and Yelp, are you familiar with those?

A. Yes.

Q. Would you agree Expedia and Yelp are not general search engines?

A. Yes.

Q. At times, Google has used a variety of -- I'd like to -- let me take a step back, as we're changing gears here, and talk about competitor ratings and rankings, how you compare Google search against others in the marketplace.

Google has used a variety of metrics to track competitors over time; is that -- do you agree with that?

A. Yes.

Q. And one of those measures was called IS4. Are you familiar with --

A. Yes.

Q. -- IS4?

A. Yes.

Q. And what is IS4?

A. Information satisfaction. It's one of the metrics we've developed over time.

Q. Google uses IS4 ratings to compare itself against its competitors, correct?

A. Where we can compare with competitors. With some competitors we can't compare with. Like Facebook, we can't

compare ourselves directly with. With Siri or with Spotlight search, we can't compare ourselves directly. But where we can compare, we use IS4.

Q. And we'll come back to that in a second. IS4 ratings use human raters to compare search results?

A. Yes.

Q. Human beings are comparing side-by-side -- are doing side-by-side comparisons of search results, correct?

A. Yeah, we actually get a version of the search results that's stripped down and then show them to raters.

Q. IS4 ratings compare Google to competitors across randomized distribution of queries, correct?

A. Yes.

Q. And Google uses human raters in the IS4 technique to compare Google against competitors such as Bing, correct?

A. Yes.

Q. And you use IS4 and human raters to compare against competitors like DuckDuckGo, right?

A. Yes.

Q. And Google does IS4 ratings to compare against Bing -- I apologize, I said Bing, I'm stepping back for a second.

Google has an ongoing evaluation of Bing as part of its work, correct?

A. We did, yes.

Q. Google does not run IS4 rating comparisons against Amazon, though, correct?

A. No.

Q. And you do not do IS4 ratings against Facebook, correct?

A. I don't know if we could. We've thought about -- I think that thought has crossed my mind, but it's not something that we could do easily.

Q. And are you familiar with the term walled gardens?

A. Yes.

Q. And would you agree that Facebook and Amazon and others similar are walled gardens that have proprietary information that is not open to the open web, correct?

A. Yes.

Q. Let's focus on Bing for a few minutes. You believe that Google provides better search results than Bing, correct?

A. I -- definitely.

Q. And in your time at search, the IS4 rankings between Google and Bing, Google always had a higher ranking, correct?

A. Yes.

Q. Now, during your time as head of search at Google, you agree you made innovations to the Google product in response to Bing?

A. Among many things. A lot of our innovations were

driven by looking at -- by looking at an ideal query set versus what we were doing. So if you want to really get a result that is much better than what you currently have, you kind of want to get like -- know what is the ideal result set for this query, and then see what signals might we be using in order to get those ideal results. So Bing may be one source in which we might see queries that inspire us, but we also got a lot of queries that inspire us from our ratings.

Q. And let me just make sure I'm clear. During your time at search, you agree there were times when Google made innovations in response to Bing, correct?

A. You'd have to be more specific about the innovations. It was a long time, so --

Q. Sure.

A. -- I'm trying to remember what in particular you're referring to.

Q. We're going to look at a couple of documents today that will help answer that question, so we'll pause and come back to that one.

At times, you tried to innovate faster at Google in response to Bing as well, correct?

A. I think we were innovating in general as fast as possible. We pushed ourselves largely based on the users and what our metrics were showing us, and where we thought we could get -- where we had new ideas to push the boundaries.

Q. During your time at search, you paid attention to Bing and used it as a case to try to make Google do better, correct?

A. We did pay attention to Bing, yes.

Q. But did you use it as a case to try to make Google better?

A. Like I said, inspiration came from many places. Bing might have been a source, but a lot of our inspiration actually came from ideal query sets and observations of where we could do better, ideas around where we could do better.

Q. And I believe --

A. A lot of it came --

Q. Sorry.

A. Sorry. A lot of it came from us also doing queries where we could see we're not getting the information we wanted, and those also drove innovations and ideas on our part.

Q. I believe this was a phrase you liked to say a lot: You believe that search is far from a solved problem, correct?

A. Yes.

Q. And you believe that Google can always do better, correct?

A. Yes.

Q. Now let's talk about some specific things that you

looked at with Bing. Let's talk about features first.

While you were the head of search, Bing had some features that were better than Google, correct?

A. You'd have to refresh me on particular features.

Q. Certainly. I'm going to hand out some documents. Dr. Gomes, I've handed you a binder of documents, and we're going to walk through some of those today.

A. Yep.

Q. They all should be marked on the edge with either a DX --

A. Yeah.

Q. -- UPX or some other numbers. I'll try to reference those today. If you need me to repeat it, please just let me know. The first one we're going to look at is UPX2045, which should be in your binder probably towards the back a little bit; 2045. And first, let's just start with the predicate.

Mr. Gomes, does this appear to be an e-mail that you received in your roles at Google around November of 2015?

A. Yes, it looks like it.

Q. And it's a lengthy e-mail chain, and we'll walk through it a little bit.

MR. DAHLQUIST: Your Honor, this one's not in evidence yet, so we move for the admission of UPX2045.

MR. SMURZYNSKI: No objection, Your Honor.

THE COURT: It will be admitted.

(Exhibit UPX2045 admitted into evidence)

BY MR. DAHLQUIST:

Q. I believe the top of the chain is an e-mail that you received, again on November 4th, 2015. And can you help me with the name, Mr. Tamar --

A. Ms.

Q. Ms. Yehoshua?

A. Yeah, Tamar.

Q. If we could go -- and you can look at the full e-mail chain, but I'd like to maybe take a step -- go back a couple pages so we can see how this originates. On the Bates stamp at the bottom right, it ends in the number 558 -- so it's the second page, and it's an e-mail on Monday, November 2 from a Mr. Eric Michel. It's a Lifehacker article, I think, is what's --

A. Oh, okay, it seems to be from a Chris Lee-Egan.

Q. That's --

A. Oh, Eric Michel, I see what you're saying, yeah.

Q. Certainly. I'm going to the very origination of it.

A. Yeah, yeah.

Q. Someone in Google search found an article and sent it around to a group?

A. No, this was -- I don't think somebody in Google -- well, at Google, but I don't believe this is somebody who was in Google search. This was a network engineer who would

probably be working a data center.

Q. And we're going to get to your response in a second, I just want to see how it starts. The article -- somebody forwarded an article from Lifehacker, and the title is Search Engine Showdown: Google vs. Bing.

Do you see that heading?

A. Yes.

Q. And if you go back a couple pages, just for your reference, all the way almost to the end, page 562, the conclusion of the article states: "The winner: Google (but by less than you'd think.)"

Do you see that?

A. Yes.

Q. So now let's flip back, I just wanted to give you that context. In response to that, back on page 552, there's an e-mail from Chris Lee-Egan. Who is Chris Lee-Egan?

A. I have no idea.

Q. Mr. or Ms. Egan says, sort of towards the end of --

A. This is 552?

Q. I'm back on 558.

A. 558, okay.

Q. Sorry, we want back to a little bit of the e-mail. The conclusion of their comment is: "While Bing is still worse quality wise, Microsoft has closed the gap quite a bit."

Do you see that comment?

A. Yes.

Q. And in response -- we're getting to you eventually here, but the one above from Mr. Woolley, do you know who Mr. Jonathan Woolley is?

A. I have no idea. It's a network engineer, somebody working in the data centers.

Q. Okay. So a Google employee said: "This is actually great news. Having a strong competitor keeps you on your toes and working hard. If you're the best by a mile, it's easy to become complacent."

Do you see that statement?

A. Yes.

Q. That was made by a Google employee, correct?

A. Yes.

Q. Let's go up one more, and here's where it gets to you on the very first page. We're back on 557 now.

A. Yeah.

Q. Mr. Lipkovitz or Ms. Lipkovitz sends it to you?

A. Mr., yeah.

Q. Who is Mr. Lipkovitz?

A. He worked in infrastructure at the time.

Q. And he states: "I'm sure someone already forwarded this to you," and he's forwarding it to you, correct?

A. Yes.

Q. And makes a comment: "FWIW," for what it's worth, "I do think our video search (universal or mode) is sad."

Do you see that statement?

A. Yeah.

Q. And it continues on: "I know no one cares about it internally, and you can convince me query volume justifies this opinion. But I can't imagine we couldn't throw a few people and make it better."

Do you see that comment?

A. Yes.

Q. Now, let me ask you just a first predicate question. In the e-mail, you respond and you say: "Back to my work address." And it looks like you responded from your personal Gmail account?

A. It looks like he sent it to my Gmail account.

Q. Did that happen frequently? Did you get e-mails --

A. No, it was --

Q. -- in your personal account?

A. -- an error. If it ever happened, I always pushed it back to my work account.

Q. And so you push it back to your work account, and you state: "I agree that video universal needs attention. Pandu" -- that's a reference to Mr. Nayak?

A. Yes.

Q. Or Dr. Nayak?

A. Yeah.

Q. "Dr. Nayak and I chatted about this recently." That was your response, correct?

A. Yes.

Q. Now, do you agree that Google's video search product at this time had low query volume; is that correct?

A. Several things are conflated over here. The universal search is what shows up in the search result page, and the video tab is, I think, the thing that he's referring to that has low query volume.

Q. And this article -- that was one of the things pointed out in this article, that the video search component of Bing was better than Google, correct?

A. That was a person's opinion. And it was worth looking at, I thought at the time, because you can always potentially do better. If you see something that's a good idea, I want to look at it. We generally do our evaluations not by random people doing random queries, but by having a large comprehensive set of queries and we're looking at them systematically. So it is possible somebody finds something that that process doesn't, but we're constantly looking for ways to improve independent of an engineer somewhere finding a particular query that does better.

Q. And this opinion was held by a Google employee who said: "I do think our video search is sad."

That was an opinion held at Google by a Google employee, correct?

A. I mean, Google has a lot of employees, many of whom are not working on search and may have all kinds of opinions. We have a systematic process for evaluating this, and by -- and judging how we are doing, and seeing whether we're -- how -- where are the biggest opportunities for improvement. The other thing is that on individual queries, like I said, when you make a query -- an improvement, individual queries can sometimes do worse while the overall set of queries does better. So there are trade-offs that have to happen as you're making these improvements, and you're constantly trying to make those trade-offs in the best way possible. And Pandu and his team were responsible for making those trade-offs in the best way possible for the overall user experience. So there may be trade-offs in bits and pieces here and there on the boundaries, and so you can easily find a query on which some other search engine is better than we are. But we're trying to do the best job for you on the whole for all your query sets.

Q. And we're going to come back to queries and talk a lot more about it in a minute, but I want to stay on features for right now. After 2015, the dates of these e-mail, Google built up its video search features in response to Bing, correct?

A. Actually, it built up its video search features, because I felt also that video is becoming a more important mode in the world as a whole. A chunk of it was actually from my experience in India. People were not as able to read and write as easily, and so I felt like people are coming to video more -- were able to consume video more than they were able to consume text. And so in order to think -- in thinking about that problem, I was saying like, well, maybe there are other things we can do to improve video ranking as well as improve the ways in which you present videos -- by breaking them up into chunks; seeing where the key frames are; understanding what the content of a video is; transcribing it; and then serving it up in different ways. Much of this was driven by the fact that video was becoming an important mode in -- especially in places like India where we could see people just consuming a ton of video.

Q. Video became a very important feature, correct?

A. Video itself is a data content type. The way in which it was presented could constitute a number of different features.

Q. Bringing it back to your statement here on UPX2045, you state: "I agree that video universal needs attention." That was your statement, right? In 2015, you agreed that the video needed attention, correct?

A. Yeah.

Q. You even discussed it with Dr. Nayak, correct?

A. Apparently, prior to this mail coming to me.

Q. Now my question is very simple: After this e-mail in 2015, did Google take efforts to improve its video search feature: Yes or no?

A. We had been improving our video search feature all along and -- video search -- we had been improving our understanding of videos, first, all along, and improving ways in which we could return videos in the search result page. And we definitely have put increasing attention on it over a long period of time. Video has just gradually become more and more important on the web.

Q. So that's yes, you improved your video search --

A. We definitely did improve our video search, but both --

Q. Great.

A. -- before this and after this. As you can see from here, I chatted with Pandu about it before this e-mail.

Q. Thank you, sir. We're done with that document, we're going to another one, DX99 in your binder. I'd like to talk about latency. Latency is another word for speed, correct?

A. Sorry, it's UPX --

Q. Sure, it's the very front of your binder.

A. Okay.

Q. First document in your binder, DX99.

A. Ah, yeah, sorry. Yeah -- yes.

Q. Latency is another word for speed --

A. Yes.

Q. -- correct? And this document -- let me make sure, this one is in evidence, Your Honor.

And there's some redacted pieces on some documents we'll look at today. I'll try not to ask you questions about those. This one, we're just going to stay on the public pieces of this document.

This is a document, friends of low latency, and it says for Gomes, so this was made for you, correct?

A. Yes.

Q. By your search team, correct?

A. Yes.

Q. And the date is May 19th of 2017, correct?

A. Yes.

Q. In 2017, your team compared Google's latency directly against Bing. Do you recall that?

A. Yes.

Q. If we can turn to, I think, page -- the third or fourth page, Bates 729 that's in bottom right-hand corner.

A. Yes.

Q. DX99, page four. In this presentation, your team found in 2017, on the top left, that Bing is faster, and asked the question why. Do you recall that?

A. Yes.

Q. And I think the answer was on the bottom right, number four. It says: "Bing uses different image loading techniques." Do you see that?

A. Yes.

Q. And on number one, it says: "Google's results arrive later." Do you see --

A. Yes.

Q. -- that as well? So at this time in 2017, Google was slower than Bing, correct?

A. For the set of queries you're looking at here, yes.

Q. Now, you believe that Google's faster than Bing today, correct?

A. I'm not involved with search directly today, so I wouldn't know.

Q. As of the time you left search in 2020, did you believe that Google was faster than Bing?

A. You'd have to ask people who are working on that more directly. It's been several years now, I don't remember. I believe we were, but I don't know.

Q. I'm asking just the time when you left, to the best of your recollection?

A. It was -- latency was one factor what I looked at. I know we were better than Bing overall in our search experience, so that's what I -- most of what I looked at, the

overall picture. To me, latency is a component of the search results page. And like I was saying, we were making lots of improvements to search results page. So in many of those cases, when you bring in, say, videos and other things, and images and so on, you also want a more interactive search results page that can result in more JavaScript. You want a page that you can change easily so that engineers can make changes much more quickly. That results in more flexible page, but sometimes it's a bit slower to load. So there are lots of trade-offs that have to happen in engineering the search results page, and lots of teams want different things to happen on the same page. So there are trade-offs there that have to be made. I was interested -- in the overall experience, I believe we were significantly better than Bing.

Q. Since 2017, Google has undertaken steps to improve its latency in response to Bing, correct?

A. We've had a team working -- we have teams working on latency since the very earliest days of Google.

Q. I believe you made a comment in your direct examination that sometimes your competitors copied you, correct, I believe? Do you recall that testimony?

A. Yes.

Q. And look at this page, sometimes Google copied its competitors, correct?

A. Well, in this context, we were interested in latency

regardless. It was one of many factors. In terms of features we were launching, we were being copied by Bing all the time. We did look to competitors to see what they were doing, too.

Q. Looking at Bing helped to make Google better, correct?

A. It was one among many things we looked at.

Q. If we can go to another document. We're going to go to UPX731, which should be in your binder, about middle way through your binder.

A. Yeah.

Q. UPX731's an e-mail exchange you had in December of 2018 with a Mr. Vince Cerf. Do you see that?

A. Yes.

Q. And Mr. Cerf is recognized as one of the fathers of the internet, correct?

A. Yes.

Q. Mr. Cerf helped to invent the TCP/IP protocols that make internet possible today, correct?

A. Yes.

Q. And at the time in 2018, Mr. Cerf was serving, I think, as Google's -- let me get this title right, chief internet evangelist, was that --

A. Yes.

Q. -- the title?

A. I believe so.

Q. What does that title mean?

A. I think at the time we were trying -- the internet was moving -- I'm not an expert in this area, was moving to IPv6 I believe, and he was pushing for that transition. But I'm really not an expert in this area.

Q. Nor am I. Mr. Cerf, in his e-mail here sent to you, about middle of the page, on Sunday, December 16th, 2018, he performs what I'll call a very specific query.

Do you see the query that he's --

A. Yeah.

Q. It starts with "recently"?

A. Yes, I think I've seen this.

Q. Now, he ran that same search on Google and he ran it on Bing. Do you see that?

A. Yes.

Q. And he says: I ran it on Google and nada," meaning he didn't get a response?

A. Uh-huh.

Q. Or not what he was looking for I guess, correct?

A. Yes.

Q. Now, he said: "So I went and did the same on Bing, and bullseye." Do you see that statement?

A. Yes.

Q. So in response to his query, he found it on Bing but

couldn't find it on Google, correct?

A. In this particular case, apparently. That's what he says.

Q. Now, Mr. Cerf continues on and says: "This is consistent with something I've noticed lately, which is that Google seems to be forgetting a lot of old stuff."

Do you see that statement?

A. Yes.

Q. Did you agree with him at that time in 2018?

A. No. This would require a systematic evaluation.

Q. The very last sentence states: "But what's clear to me is that Google has real competition in search." Do you see that statement?

A. Yes.

Q. He continued on in his first sentence in the next paragraph: "I also prefer Bing's image search as well." Do you see that statement?

A. Yes.

Q. Now, you respond the same day, and your response is: "We do systematic comparisons with Bing, and we are ahead on our metrics." Do you see that statement?

A. Yes.

Q. "However, it is quite possible that our push towards freshness loses us some relevance."

A. Yes.

Q. Do you see that statement?

A. Yes.

Q. Was that statement accurate when you wrote it in 2018?

A. I don't know, this is -- I said it was a possibility. Ranking is actually -- there's lots of trade-offs between the locality of where the result comes from, the freshness of the result, and a whole host of other signals, right -- the relevance of the result, the quality of the page. And so we're making these trade-offs constantly, and our overall metrics are trying to capture whether overall we're doing better as a result.

Q. You continue on and state: "We will definitely look into that." After this e-mail, did you look into the comparison of Google's relevance as compared to Bing?

A. I would typically say this to anybody who sent me an e-mail of this sort, because we want -- I would look at the query and see if there's anything there. You know, if people sent me advice on how to improve, I was definitely open to it.

Q. And I believe the last document you looked at you discounted because it just came from somebody you didn't know at Google. Do you recall that? You know Mr. Cerf, right? He knows --

A. Yes.

Q. -- what he's talking about?

A. He's absolutely -- he's not an expert on search at all. He has never worked on the search team, he's never worked with the search team in any capacity.

Q. He helped to invent the internet, correct?

A. Yes. That's a little bit removed from search.

Q. Understood.

A. We all use the internet.

Q. The next statement says -- where you state: "We are aware of the image search issues and are now working pretty hard on image search, and you should see a lot of improvement this year (our investment was lower for a while but is now much higher.)"

Do you see that statement?

A. Yes.

Q. And after this e-mail -- or around the time of this e-mail, Google increased its investment in image search, correct?

A. We apparently had been improving our -- increasing our investment in image search before this.

Q. And you were telling Mr. Cerf to keep a look out, and that Google's image search will get better, maybe in comparison to Bing's, correct?

A. It would just -- it's going to get better, yeah.

Q. Now, we just reviewed a few examples from one select

time period, 2015 to 2017, when Bing was better than Google on latency, relevance and some other features, correct?

A. It was better than Google -- the claim in that document is it was better than Google's latency on some queries, yes.

Q. Now, Google undertook efforts after this time -- and as you said, during this time --

A. And before that time.

Q. And before that time, Google undertook efforts to respond to Bing and improve its search products in response to these few specific examples, at a minimum, right?

A. In all of these cases, these are things that we'd been working on all along. There are cases where you can see some inspiration perhaps from whatever else might be happening on the internet. And if people send you particular examples -- you're getting examples all the time from lots of people of things that we could improve. These are particular examples of what we could improve. But much of what we had done was driven by our metrics and where we could do better on our metrics. Because you have to take into account all the different trade-offs you're making in any of these improvements. You can drop all your features and become much faster, or you can have more features and serve the information need better. If you get the right result -- if you have -- if you can quickly respond with the wrong result,

it's not as useful as taking a little bit more time to respond to the right result. So some of your latency is going to be caused by the fact that we're doing more computation to do better ranking. A whole of features can -- things can cause high latency.

Q. Sir, during this time period, 2015 to 2017, and continuing today, you believe that Bing is a weaker competitor to Google, correct?

A. I believe we have a great product and we are the better search engine.

Q. And Google has the highest market share in the search market, correct?

A. You'd have to show me the particulars of how that's estimated, but I --

Q. You believe that Google is the strongest competitor, as compared to Bing, in the search market, correct?

A. We believe we have the best product.

Q. If Bing was an even stronger competitor to Google, then or now, Google would be forced to make additional and more improvements, correct?

A. Like I said, we're driven by the ideal of what the user could see, and one of the lowest hanging fruit -- one of the best opportunities and ideas we have to improve towards that ideal. So that is what gives us more of our inspiration than anything we do with competitors. Because that ideal

tells us this is what a user is really looking for, this is what we want, and we're moving towards that.

Q. Changing topics a bit, we're going to talk about a little bit about what we hit on before, the idea of queries. Google does not charge users to use search, correct?

A. No.

Q. Google makes money through search advertising, correct?

A. Yes.

Q. Advertisers can bid higher in a search ad auction to influence their ranking in a search ad auction; do you agree?

A. I'm not an expert on the advertising system at all.

Q. In response to any commercial query, Google generally shows four ads that appear above the organic search results, correct?

A. It shows some range of -- a number of ads.

Q. Your team's responsible for the organic --

A. Yes.

Q. -- not the search ads? At some point, you recall that Google increased the number of ads that could show from three to four, correct?

A. Yes.

Q. And you were part of the decision process of that, correct?

A. I was aware of it, I was not the one who made the

decision.

Q. Now, in general, Google tries to keep the search side of the business separate from the ad side of the business, correct?

A. No. What we do is advertisers cannot influence search ranking. That is the thing that we hold really strongly. No matter what you spend on advertising, that will not affect your ranking in search. That is what we mean by the division between the two sides. But we are both working on the same page, we're creating one product. So the product had better look coherent and reasonable to a user.

Q. And just so summarize what you said. An advertiser cannot pay more money in the organic search links to influence their positioning --

A. Yes.

Q. -- correct? The same is not true for the ad side, correct?

A. That's the nature of advertising, yes.

Q. Now, in general, I believe before you became SVP of search, you generally were not aware of the revenue numbers at Google, correct?

A. People might have told me at various times. It's not something I paid close attention to.

Q. Revenue was not something you focused on in your work as an engineer at Google, correct?

A. No, it was not part of my job, no.

Q. But when you got promoted and elevated, you did hear and engage in a lot more discussions about revenue at Google, correct?

A. Well, there were -- in general, I became a little bit more aware of the total revenue of the company.

Q. Sir, are you familiar with the term code yellow, as it's used at Google, correct?

A. Yes.

Q. And a code yellow declares a situation or an issue that needs to be addressed with some urgency at Google, correct?

A. Yes.

Q. And you've been involved in code yellow projects during your time at Google search, correct?

A. Yes.

Q. I'd like to call your attention to one specific code yellow. Do you recall around February of 2016, a code yellow was declared because Google was not meeting its revenue targets for the quarter?

A. You'd have to show me the --

Q. We can certainly do that. If you can take a look at UPX2043 in your binder, probably the last quarter of the binder. UPX2043 is an e-mail chain that you received around February of 2019, correct?

A. Yeah.

MR. DAHLQUIST: And Your Honor, this one is not yet in evidence, so we'd move UPX2043 into evidence.

MR. SMURZYNSKI: No objection.

THE COURT: It will be admitted.

(Exhibit UPX2043 admitted into evidence)

BY MR. DAHLQUIST:

Q. This e-mail was forwarded to you, but I'd like to ask about the first -- it's just a short e-mail, one page. On the first page, halfway down, it's an e-mail from Mr. Jerry Dischler?

A. Yes.

Q. And in 2019, Mr. Dischler is working in the ads group, correct?

A. Yes.

Q. And he sends it to a number of senior executives including yourself, correct?

A. Yes.

Q. And he states: "All, Shiv and I are calling a code yellow for search revenue starting today." Do you see that statement?

A. Yes.

Q. He continues: "We've seen steady weakness in the daily numbers, and are likely to end the quarter significantly behind if we don't turn things around." Do you

see that statement?

A. Yes.

Q. Now, the reference to weakness and daily numbers, that's a reference to query numbers, correct?

A. I actually don't know what he's referring to here, whether it's query or revenue or what.

Q. And I think the next document gives it some context. But before we leave this one, Mr. Dischler continues on: "If we divide up the weaknesses, there are three contributing factors." Do you see that?

A. Yes.

Q. "One, search query growth is significantly behind forecast." Do you see that?

A. Yes.

Q. So that's a specific reference to search queries, correct?

A. Yes.

Q. And Mr. Dischler asks you and Darin -- who is Darin?

A. Darin, I believe, at the time was the head of Chrome -- or the engineering lead on Chrome, I'm not sure which.

Q. So he asks you and Darin to -- I think at the end here: "Conduct urgent analysis to understand the nature of the weakness." Do you see that?

A. Yes.

Q. You were asked to conduct urgent analysis to understand the nature of the search query weakness, correct?

A. Yes.

Q. And Google would use search query growth as part of its revenue targets around this time in 2019, correct?

A. I think you'd have to ask the ads team about that, I was not involved in revenue targets at all.

Q. But you're on this e-mail referencing search query growth as a reason for the weakness, correct?

A. Yes.

Q. Let's go to the next document that gives a little bit more context to this, UPX2044. So it's back -- the next document. UPX2044 is an e-mail chain from February 2019, do you see that?

A. Yes.

Q. And was this an e-mail that you received in your role at Google in February of 2019?

A. Yeah.

MR. DAHLQUIST: And Your Honor, this one is not yet in evidence, so we hereby move 2044 into evidence.

MR. SMURZYNSKI: No objection.

THE COURT: It will be admitted.

(Exhibit UPX2044 admitted into evidence)

BY MR. DAHLQUIST:

Q. Now, the title of this e-mail chain that you received

in February of 2019 is: Getting Ridiculous. Do you see that heading?

A. Yes.

Q. And I'd like to just focus on your e-mail. There's a longer e-mail chain that you can certainly take a look at, but it all starts really in reference to this same code yellow. Do we agree?

A. Yes -- well, I don't know about that, but I'm assuming from --

Q. If you need more context, you can certainly go in, but I'm just going to focus on your e-mail at the top. And so the very next day, after the Mr. Dischler e-mail that we just looked at in the prior document, you're on an e-mail chain entitled: Getting Ridiculous. And you state at the top that you believe -- I'm sorry, your statement is: "I tend to agree that we are getting too close to the money."

Do you see that statement?

A. Yes.

Q. Now, you believed that that was search getting too close to the revenue side of the business, correct?

A. This is a really subtle discussion. If you look at this e-mail thread -- if you'd give me a minute --

Q. Sure.

A. -- there's a lot of things being discussed here. Much of this is about how we set our goals for the joint

search product. And the question is how do you actually agree on what's a right target for what we need to do as a search team. And my -- the discussion here is about whether queries, in some ways, was the right way to measure the growth of -- is the right way to measure growth. From my perspective, queries had always been a tricky way to measure growth, because there are changes you can make that actually reduce the number of queries but are good for users. So I never liked the notion of pure queries as a growth metric, but we also needed to agree on, like, what was the right growth metric. And so this was a discussion about exactly what could be a good metric.

Q. And we'll get into that. And it eventually evolved to a SUN --

A. Yeah.

Q. -- type of metric? And we'll talk about SUNs in a few minutes, but let's stay focused here on UPX2044. You stated in February 2019 that you tend to agree that Google search was getting too close to the money, correct, that was your statement?

A. Like I said, there's a context of what I meant by that. This was in the context of people are talking about a particular OKR metric. There's an OKR being mentioned here in the course of this e-mail chain.

Q. And you continue on stating you believe it's good to

aspire to query growth and to aspire to more users, correct?

A. Yes.

Q. But you think that you are getting too involved with ads for the good of the product and company, correct?

A. That's what I said, yes.

Q. And you agreed with that when you wrote it in 2019, correct?

A. This was a moment of some frustration about a particular setting of an OKR. This was an e-mail written at 6:00 in the morning. The nature of how we set joint goals had become a little -- it was a little contentious in this particular case, and so this was written in that context of exactly how do we set a joint goal with ads. Because we couldn't agree -- I did not care for queries as a metric by which we -- that we jointly aspired to.

Q. You continued on in your statement: "We need to think of other issues, like DuckDuckGo and the privacy challenge, in our innovation narrative." Do you see that statement?

A. Yes.

Q. Rather than focusing on query growth, you wanted to focus on issues like privacy and innovation, correct?

A. Both things matter. This was not about -- it was not about innovation, we're always innovating, this is our innovation narrative. At this point, DuckDuckGo, I believe,

was advertising extremely heavily against us. They were using a huge amount of marketing, and I was seeing their ads everywhere. And so some of this was referring to the fact that I believed that marketing was a huge challenge to us, and we needed to spend some time on that.

Q. Your next statement isn't about marketing, though, it states: "We need to retain users for the long run." Do you see that statement?

A. Yes.

Q. And you agree, this was the divide that you had: Your goal of search was to retain users for the long run, and you were concerned that the ads group was in it for the short run, correct?

A. I think this metric of just using just queries is not one that optimizes appropriately. So this was a discussion about the metric. Ads also wants users for the long run, they also want long term business. We are aligned in this, there's no difference in what our incentives are.

Q. You end your e-mail here -- I'm sorry, I didn't mean to cut you off. You end your e-mail here by stating: "I am getting concerned that growth is all we are thinking about." Correct, that was your statement?

A. Yes.

Q. While you were the head of search, you did not agree with spending more time thinking about short-term

improvements rather than long-term improvements, correct?

A. I don't think at any point in search were we thinking primarily about short-term improvements or I think -- and the ads team, too, I think has a long-term point of view from my understanding.

Q. You're not involved in the search ads team, correct?

A. No.

Q. So I'm just asking from your perspective. Your goal, as head of search, was to always focus on the long-term improvements rather than short-term improvements, correct?

A. On the long-term health of search, yes.

Q. Now, this debate that you're having here on UPX2044 -- or let me -- that was a mischaracterization. Let me take a step back.

The e-mail that you wrote in UPX2044 focusing on the question of query growth, Google seeks to grow queries because it means more users to Google, correct?

A. We're serving more people. We have a product that we think is really good. We'd like more people to use it and for more purposes.

Q. More queries means more ads on Google search, correct?

A. It depends on the type of queries and so on, yeah.

Q. And more ads translates into more money for Google, correct?

A. I assume so.

Q. Do you agree, sir, that more queries means more revenue for Google, correct?

A. The ad system is a complicated system. I assume so.

Q. But more than just an assumption, you know that from your work at Google, more queries means more revenue for Google, correct?

A. Sure.

Q. Continuing with this chain, let's look at PSX204. It's in your binder as well. PSX204 is an e-mail between you and others at Google from March of 2019. Do you see that?

A. It's the other binder?

Q. No, I'm sorry, the same binder. We're still in our document binder. The document is PSX, it's the second document in the binder.

A. Okay, yeah, got it.

Q. Did you find it now?

A. Yes.

Q. PSX204 is an e-mail to you and from you in March of 2019 in your role at Google, correct?

A. Yes.

MR. DAHLQUIST: Your Honor, this document is not yet in evidence, so we hereby move PSX204 into evidence.

MR. SMURZYNSKI: No objection.

THE COURT: It will be admitted.

(Exhibit PSX204 admitted into evidence)

BY MR. DAHLQUIST:

Q. This is an e-mail chain -- I'm going to come back to your e-mail in a second, but I'd like to take one step back. If you can look at the bottom of the second page, top of the third page ending in 073 into 074. This is still connected to the code yellow that was announced. And right at the top of 074, the very first line states: "Week seven marks the end of our code yellow. We met both our exit criteria as of today."

Do you see that statement?

A. Yes.

Q. So this is the culmination of this code yellow sequence, correct?

A. Yeah, that's that thread, yes, that part of the thread.

Q. And that means that Google met its quarterly financial goals for this session, correct?

A. Again, this is from the folks from the ads team.

Q. So let's take us back to one page, to 073. And I'd like to look at an e-mail from your colleague, Dr. Raghavan.

A. Yes.

Q. Which is about a third of the way down the page. So Dr. Raghavan e-mails you and says: "Let's talk about this Monday, please," correct?

A. Yes.

Q. And he states: "The current revenue CY" -- what does CY stand for?

A. I assume code yellow in this context.

Q. "The current revenue was addressed by heroic RPM engineering." And RPM engineering is revenue per thousand, correct?

A. I assume so.

Q. It's a sales ad term, correct?

A. Yeah.

Q. So let me read it again: "The current revenue CY was addressed by heroic RPM engineering, but the core query softness continues without mitigation." Do you see that statement?

A. Yes.

Q. He continues: "At this rate, the full year plan is a bad miss and will need drastic steps on the query side." Do you see that statement?

A. Yes.

Q. Dr. Raghavan e-mailed that directly to you, correct?

A. Yes.

Q. Now let's go to your response, the first page of PSX204, at the very top 72. Now, you were annoyed by this e-mail, correct?

A. Yes.

Q. And you were the head of search at this time, correct?

A. Yes.

Q. And you were not in favor of using queries as a metric for measuring for the performance of search, correct?

A. Yes.

Q. And you state here at the top -- now, you send this e-mail -- it's a draft, you were thinking of sending something in response, correct?

A. Yes.

Q. And you send it to Mr. Nick Fox. Who is Mr. Fox?

A. He was the head of product at search.

Q. And you sent it to another gentleman?

A. Shashi, and he was leading a large -- he, along with Pandu, led a large chunk of our search product engineering work.

Q. And you state: "Hey, here's what I want to send to" -- that's Mr. Nayak, "prior to the meeting," correct?

A. No, to Mr. Raghavan you mean.

Q. I'm sorry, Mr. Raghavan. I apologize. This is what you wanted to send to Mr. Raghavan prior to the meeting, correct?

A. Yes.

Q. And you state: "I have to admit that I'm feeling annoyed, both personally and on behalf of the team," correct?

A. Yes.

Q. Let's go down to the first -- second tick mark that starts: "Most headcount." Do you see that?

A. Yes.

Q. "Most headcount (non-assistant for search) has gone into projects that are growth oriented." Do you see that?

A. Yes.

Q. "To the point where I worry that we are really not investing in research or speculation adequately." Do you see that statement?

A. Yes.

Q. By speculation, you mean big ideas, correct?

A. Well, random speculation. I mean, this e-mail was sent in a moment of annoyance. But I was trying to make the case to -- I think the way I interpreted this is Prabhakar was saying you all have not done enough. And my response was like, no, we're doing a lot. So this was said in that context. Most of our ranking teams and so on are working on ideas that we don't know whether they're going to work or not, so this is an overstatement of that fact. But we were putting a significant effort into ideas that we thought would increase the amount -- satisfy more user needs and increase the amount of usage we had in search. Those two things are not necessarily at odds, right.

Q. But you believe there are many ways in which you can

improvement search quality, but actually resulting in fewer queries, correct?

A. Yes.

Q. And your statement there, that most of the headcount went into projects that are growth oriented, there you're referencing projects that are oriented on growing queries, correct?

A. On serving more information needs and thereby growing queries. We have no way of growing queries directly unless we do a better job with search.

Q. Well, let's -- I don't know about that. Let's talk about that. Go down in your same e-mail here, the last full paragraph. You state: "We could increase queries quite easily in the short term in user-negative ways." Do you see that?

A. Yes.

Q. So you wrote this e-mail, correct?

A. Okay, there's no way I would consider ever doing those things.

Q. But you're telling -- you're stating --

A. Sure, sure.

Q. -- in this e-mail that --

THE COURT: Hang on, hang on. Let's not talk over one another, please.

BY MR. DAHLQUIST:

Q. Let me restate my question. You agree that Google could increase queries quite easily in the short term in user-negative ways, if it wanted to, correct?

A. I was proposing things that we would never do, like turning off spell correction. I could never imagine us doing that.

Q. Well, the next line you state: "If we, as a company, want to go there, we should discuss that." Correct, that's your statement?

A. As I said, this was a moment of annoyance in this conversation.

Q. Let's go to the last line in the same paragraph. You state: "The easy ways are almost all bad." Do you see that statement?

A. Yes.

Q. You continue: "Having queries as a metric will, in my opinion, have a subtly bad effect as a launch metric, even if we 'decide not to do the bad things.'" Do you see that statement?

A. Yes.

Q. And you made that statement in --

A. Yes.

Q. -- 2019, correct? Now, this e-mail was in March of 2019, correct?

A. Yes.

Q. You left your role as head of search less than a year later in 2020 --

A. Yes.

Q. -- correct?

A. A little bit more than a year later, yeah.

Q. And this was a draft e-mail to Dr. Raghavan, correct?

A. Yes.

Q. Dr. Raghavan took over the role as head of search when you left, correct?

A. Yes.

Q. And he's continuing to run search today, correct?

A. Yes.

Q. Now, earlier you talked about -- thank you, we can take that document down.

Earlier you talked about a discussion of moving from queries as a measurement to -- I believe the term is SUN, S-U-N, correct?

A. Yes, yes.

THE COURT: Mr. Dahlquist, let me interrupt you. It's almost 3:00 o'clock, so why don't we go ahead and take our afternoon break, and we'll pick up again at 3:15.

Thank you, everyone. See you shortly.

(Recess taken at 2:57 p.m.)

(Back on the record at 3:16 p.m.)

BY MR. DAHLQUIST:

Q. Dr. Gomes, I was told we're both talking too fast, so I'm going to --

A. I was told the same thing.

Q. -- try to slow down. Right before the break, Dr. Gomes, we were talking about the metric that was being used to measure performance on the search side and on the ad side around 2019, correct?

A. Yes.

Q. And we were looking at a document, PSX204, where Dr. Raghavan had made a comment to you that honestly annoyed you. Do you recall that? And you drafted a response back to him in advance of a meeting that you all had, correct?

A. Yes.

Q. Did you ultimately send the document in PSX204 to Dr. Raghavan?

A. I don't believe I did.

Q. But you spoke about it in a meeting that came subsequently?

A. I don't actually know what we spoke about. Some of this was sort of like getting my annoyance off my chest.

Q. But in PSX204, Dr. Raghavan's e-mail to you stated that he believed the search team needed to take drastic steps on the query side, correct?

A. Yes.

Q. And after that, there was a meeting at some point

where you expressed your difference of opinion with him as to using queries as a metric, correct?

A. I don't know if it happened in a meeting with him or whether there was some other process by which we came to that. But we came to an understanding of what the right metric was to use in order to make sure -- we both wanted the product to grow, and what is a metric that captures growth while not -- and is always positive for users. So we came up with the metric of SUNs, as you mentioned, semantic user needs.

Q. SUN, S-U-N, stands for semantic user need, correct?

A. Yes, yes.

Q. And this was thought of as a metric to use rather than using queries, visits or DAU, which is daily average user, correct?

A. Daily active user.

Q. I'm sorry, daily what?

A. Active user.

Q. Active user, thank you. And a SUN -- and this is, I believe -- this is right, but you can correct me. A SUN is a group or a series of semantically similar queries that are grouped into a single visit, correct?

A. Yeah, what we're trying to get at is are we serving more different types of user needs. And so an individual query doesn't get at that, because two queries -- if you do

more queries, maybe we're not serving that user need as well. And if they're just there for the day, they might be just doing one user need. So if we launch more things and do -- improve in certain various ways, we're hopefully serving more of their user needs and they're coming to us for a variety of user needs. And so the semantic user needs should go up even if queries go down.

Q. A SUN has a relationship to the number of queries, though, correct?

A. It is a clustering of queries.

Q. For example, if I search for costume and then I search for Halloween costume and then I leave, that would be two queries but one SUN, correct?

A. Yeah, depending on how the system works. But, yes, that's the idea.

Q. And some SUNs can only have a single query. If I type Halloween costume and get what I need, that's one SUN and one query, correct?

A. Yes.

Q. And if I type D.C. restaurant, that could be a second query and a second SUN, correct?

A. It could be.

Q. The SUN is proxy metric that Google uses to measure a search user experience, correct?

A. Yes -- I think calling it a search user experience

is -- it's not quite measuring search user experience. It's measuring how useful we are for serving a variety of user needs.

Q. And do you agree that 78 percent of Google's revenue is covered by SUNs with one or two queries?

A. I wouldn't know.

Q. Is there something that I could show you that would refresh your recollection?

A. Sure.

Q. Your Honor, if I may approach.

Sir, I've handed you a document marked UPX2075.

A. Yeah.

Q. And we're not going to put this up on the screen, this didn't go through the confidentiality process, Your Honor. I'm just trying to refresh recollection here. If you can turn to the -- a couple pages in, 1197.

You see the heading is: Most of our Revenue, do you see that?

A. Yes.

Q. So let me just -- if you'd take a look at that, and then let me re-ask the question -- or let me ask two questions.

Do you agree that most of Google's revenue is covered by one to two query SUNs?

A. I have no idea who created this presentation and to

whom it was given. I don't believe it was given to me.

Q. Do you agree this is a Google presentation?

A. It certainly looks like one, yes.

MR. DAHLQUIST: Your Honor, we move to admit UPX2075 as a party admission.

MR. SMURZYNSKI: Your Honor, I have no objection to the admission of the document. I'm not sure it's a party admission, but we don't object to the document.

THE COURT: Okay. I agree with that, so we'll admit it as a business record, UPX2075.

(Exhibit UPX2075 admitted into evidence)

BY MR. DAHLQUIST:

Q. Thank you, Your Honor. We can move on from that document.

A. I actually have no memory of this.

Q. Dr. Gomes, moving to a different topic. You're familiar with the idea or the concept of choice screens?

A. Yes.

Q. And a choice screen is where a user can select different a default engine -- search engine, correct?

A. Yes.

Q. And you're aware that in some parts of the world, users are given a choice as to who they want as their general search engine on their phones or desktop, correct?

A. Yes.

Q. And while you were the head of search, you were involved with the implementation of a choice screen in the European Union, correct?

A. It happened in my team, yes.

Q. And if we could take a look at a document, UPX749.

A. Actually, that may not have happened in my team. It happened at Google, but I'm not sure if it happened in my team or not.

Q. You were involved in the process?

A. I was aware of it.

Q. UPX749 is a document -- an e-mail chain, it's an e-mail and then an attachment?

A. Yeah.

Q. And the e-mail is to you around July of 2019, you and many other senior executives at Google, correct?

A. Yes.

Q. And the title of this e-mail is: Go Big in Europe. Do you see that?

A. Yes.

Q. And that was the title given to the process of when the EU choice screen was being rolled out and Google's strategy around it, correct?

A. This was a deck presented by a person working on a response to that choice screen.

Q. I'd like to look at the first page of UPX749, Bates

stamp 081. The first bullet point, do you see that, under AIs -- AIs is action items, do you agree?

A. Sorry, one second. This is in the deck or in the --

Q. In the e-mail --

A. In the e-mail, sorry.

Q. We'll start in the e-mail.

A. Yeah, yeah.

Q. So first page, UPX749, Bates stamp 081, the first bullet point is: "Breakdown year by year of expected revenue loss (EU choice screen, Android device activation timeline, and potential revenue gain from product investments post marketing.)"

Do you see that sentence?

A. Yes.

Q. Now, as a result of the EU choice screen, Google modeled a year-by-year breakdown of expected revenue loss, correct?

A. According to this, yes, yes.

Q. And the revenue loss was expected as a result of the choice screen, correct?

A. We didn't know really what would happen. This was trying to figure out what might happen.

Q. And it also was a result of new Android devices being activated with a choice screen, correct?

A. As it -- that's what it says here.

Q. The second sentence states: "Model wider range in revenue loss based on current market share," arrow, "survey choice." Do you see that statement?

A. Yes.

Q. "Google also modeled a wider range in revenue loss based on its market share at the time," correct?

A. That's what it says, yes.

Q. "Google believed that giving EU consumers a choice with a choice screen would cause it to lose market share," correct?

A. Well, we actually didn't know what would happen, and it -- and this was just sort of modeling possibilities.

Q. At the time it modeled -- let me strike the question.

The statement there has two names, Bornheim and Friedenson. Do you see these two names on the first bullet point?

A. Yes.

Q. Do you know if either of those two individuals are lawyers?

A. I would not remember at this point.

Q. Okay. Let's turn to the first page of the deck, UPX749 at 5275 titled: Go Big in Europe?

A. Yeah.

Q. And you were at the meeting where this was presented, correct?

A. Possibly. I have no reason to believe one way or the other.

Q. Let's go to the second page, which is the executive summary.

A. Yeah.

Q. And it's at UPX749 at 5276. Under the executive summary, the first text states: "Choice screen revenue at risk." Do you see that statement?

A. Yes.

Q. Now, it says: "Details privileged sanitized from this deck." Do you see that?

A. Yes.

Q. Do you recall that the revenue -- well, let me strike that.

Do you know why the revenue details were declared as privileged in this deck?

A. I think you'd have to ask a lawyer.

Q. Do you have revenue discussions at Google in your time?

A. I mean, revenue is definitely mentioned at times.

Q. Was it always a privileged discussion, based on your knowledge?

A. Frequently, we were not part of revenue discussions because it was -- I was working in search and I was not part of those discussions.

Q. The next bullet states: "To address we plan:" Do you see that?

A. Yes.

Q. And the first, I think it's table, states: "Brand affinity marketing campaigns," right?

A. Yes.

Q. Now, in response to the EU choice screen, Google intended to launch new marketing campaigns, correct?

A. Yes.

Q. The goal was to make more people aware of the quality of Google's search product, right?

A. Yes.

Q. The second bullet point states: "Efforts to drive DAU uplift." Daily active user was the DAU that we just referenced a minute ago, correct?

A. Yes.

Q. The first bullet says: "Improve search experience in two local markets, France and Germany." Do you see that?

A. Yes.

Q. It continues, "New best-in-class or exclusive experiences, e.g., in-game and immediate post-game soccer video highlights."

A. Yes.

Q. So in response to the EU choice screen, Google intended to improve the search experience to a best-in-class;

is that correct?

A. Yes -- well, I don't know what best-in-class means in this context. We launch things principally -- first of all, typically in the U.S. in English, because that's where a bulk of the engineering team resides. And then many of these experiences are then taken to Europe and other countries. On occasion, we have to do specialized things in particular countries because they have different sports, like there's a German league or a French league. And so it may take us a bit longer to get the features we want into those markets. So this was speeding up something that would likely have happened anyhow, but speeding it up in this context -- which it is a prioritization call.

Q. The efforts reflected on this page, the executive summary states that these are efforts in response to the revenue risk as a result of the EU choice screen, correct?

A. I mean, they're talking -- things are being conflated here. In general, you want to make sure that when users are using search, they're aware that Google search is the best experience. In the context of this choice screen, one of the thoughts would be that there would be a lot more marketing and advertising happening around search, and we needed to be prepared for that and be launching new things that are visible that we could use in marketing campaigns. Our search quality, we're always trying to have to be the best

regardless. But some of these things like soccer and so on may be more appealing in a marketing context against other people marketing things at us, which we expected might happen.

Q. The second bullet point states that Google intended, in response to the EU choice screen, to focus on showcasing local content. Do you see that?

A. Yes.

Q. And at the very bottom, it has in the summary the 2019 P&L impact. Do you see that?

A. Yes.

Q. Google intended to invest additional FTEs around their score of $3,000,000 in 2019, and then in 2020 invest 52 FTEs from 179 to 296,000,000. Do you see that statement?

A. Yes.

Q. Do you agree that in response to the EU choice screen, that these were Google's plans to invest more money, correct?

A. Yes, but this is a relatively -- in the context of a team with thousands of engineers, this was a relatively small delta. But it was in the context of making sure that we had good marketing, should there be marketing against us.

Q. The EU choice screen made Google think about what it might be missing in these countries, and what Google could do better, correct?

A. We were thinking of all these things regardless. It prioritized -- it caused us to prioritize countries a little bit differently. We typically would try and do things across all of Europe, and try and find a common way to do it. In this case, we might try and go faster in France and Germany and find some local providers of data. There are lots of trade-offs we have to make in order to launch these things internationally. We operate in a lot of different countries, and this was prioritizing France and Germany perhaps a bit ahead of some other countries.

Q. You agree that the EU choice screen made Google think about what it might be missing in these countries, and what Google could do better, correct?

A. We were thinking of what we might be missing anyhow all the time. This was figuring out how we could speed up the process of launching it.

Q. Sir, if you could look in your binder at the deposition in front of you.

A. Yeah.

Q. We're going to look at December 10th this time, December 10th, 2021, pages 212 through 213, lines 17 to line two on the next page. So December 10th, page 212. Let me know when you're there.

Are you there, sir?

A. Yes.

Q. Great. On December 10th, 2021, were you asked the following question, and did you give the following answer:

"Question: Do you agree that the impetus for those product changes was the implementation of the European choice screen?"

"Answer: I think this made people think about those countries in a slightly different light and say 'well, is there some way, some other things that we could be doing that we may be missing?' But we are doing a lot across these countries, so there is -- there's -- this is looking for anything we might be missing. We're always looking to see how we could do better."

Were you asked that question, and did you give that answer?

A. Yes.

Q. Thank you, sir. Sir, you believe that Google has the highest search quality in Europe today, correct?

A. Yes.

Q. And at the time of this presentation in 2019, you believed that Google had the highest search quality, correct?

A. Yes.

Q. It also --

A. Well, Europe is -- in all the different countries in Europe, yes.

Q. And I guess we're focused on the EU, for purposes of

the EU choice screen, correct?

A. The EU countries, yes.

Q. And you believe that Google has the highest market share of all search engines in Europe, correct?

A. It depends on how that's defined, but sure.

Q. Despite being the highest quality today, and as of 2019, Google was concerned about losing users as a result of the EU choice screen, correct?

A. We thought there might be significant marketing presentations against us, and we wanted to make sure that users remembered what search engine they were using and the quality that was associated with Google.

Q. And it was not until the EU choice screen that Google decided to make the investments identified in UPX749, the Go Big in Europe, correct?

A. We were making investments in Europe all the time. This was on the margin as a couple of extra investments, yeah. The European market is extremely important to us, and so we invest in all those countries in a very big way.

Q. New topic, sir. Your counsel showed you a document, DX2035 --

A. Yeah?

Q. -- handed to you as a one-page handout, a new way to search some content for your apps. Do you still have that handout?

A. Yes -- somewhere here, yes.

Q. And he asked you some questions about -- this was a new product that was launched in 2016, and then I think unlaunched in 2019 was the --

A. Yeah.

Q. -- testimony, correct? Sir, have you heard of a company called Branch?

A. No.

Q. You're not aware that Branch developed a technology that could search apps on a user's phone?

A. No.

Q. While you were the head of search, you worked on -- did you work on this product in DX2035?

A. I mean, it was in my -- depending on the dates, it would have -- no, in 2016, it would not -- possibly not have been in my reporting chain.

Q. So this is not a product that you had personal knowledge of at the time?

A. I had personal -- I had knowledge of it, but it was not in my reporting chain.

Q. Not in your reporting chain?

A. Yeah.

Q. Did you ever use this product?

A. I think I've used it on my phone at the time, but it's been a while, some years ago.

Q. I believe you stated that this didn't get a lot of usage at the time, correct?

A. By 2019, when we unlaunched it, we were not seeing much usage of it.

Q. I believe the Court asked you a question as to how would the search run, and I think you said --

A. Yeah, yeah.

Q. -- it was in the Google search widget, correct?

A. Yeah.

Q. To find the results, do you know if you had to click on a totally different tab in order to find the results that would be produced by this search?

A. I believe it was in the autocomplete. These were results in some cases being shown even in autocomplete. That's what I remember seeing at some point.

Q. And the product referenced in DX2035, it only searched Google proprietary apps, correct?

A. This says it's actually searching more than that, it's searching -- it said it was searching --

Q. Look at the bottom of --

A. It will be able to search LG's pre-installed apps.

Q. Right. So let's look at the bottom of page two -- I think is what you're looking at, which is where I wanted to go. At the bottom of page two, it states: "Today, this experience works with apps like Gmail, Spotify and YouTube."

Do you see that statement?

A. Yes.

Q. And so at the time it was launched, it only worked with proprietary apps -- as well as I guess Spotify?

A. Spotify is not our app.

Q. That's right, I'm just -- that's what I want to make sure. So at the time it was launched, it worked with proprietary apps like Gmail and YouTube as well as Spotify, correct?

A. Yeah.

Q. He then states: "In the coming months, we will also be adding more apps, including Facebook Messenger, LinkedIn, Evernote, Glide," and then a few others. Do you see that?

A. Yes.

Q. Do you know, were those additional apps ever added?

A. I wouldn't remember at this point.

Q. Do you recall at the time that 2035 was delaunched how many apps it was searching?

A. No, I would not remember.

Q. Do you recall if it was only about a dozen?

A. I have -- I would not remember.

Q. Do you have any knowledge how many apps Branch could search?

A. Like I said, I don't know about Branch.

Q. I believe you testified in your deposition -- let me

strike that.

While you were head of search, Google developed a tool to help search mobile applications. Do you recall that?

A. Yes.

Q. Was that this in DX2035 or something different?

A. There were many different approaches we had to trying to search mobile apps, none of which really worked very -- none of which were -- seemed to have a lot of usage.

Q. I believe you said that Google made various attempts at building a tool that could search mobile apps, but it was very difficult, correct?

A. I don't -- I mean, there were -- the thing is from what I remember of the unlaunch of this, it was just not getting any usage. Whatever we had tried was just not getting much usage. There didn't seem to be user interest in it.

Q. Separate and apart from the product in 2035, were you aware in part of other products that would search apps?

A. They were not in my world as another team working on that, so I would not remember completely.

MR. DAHLQUIST: Your Honor, if I may have a minute.

(Brief interruption)

MR. DAHLQUIST: Your Honor, no further questions.

THE COURT: Okay. Mr. Cavanaugh.

MR. CAVANAUGH: No questions, Your Honor.

THE COURT: Any redirect?

MR. SMURZYNSKI: Your Honor, we have no redirect.

THE COURT: Okay, terrific.

MR. SMURZYNSKI: Thank you, Mr. Gomes.

MR. DAHLQUIST: Thank you, Dr. Gomes, for your time.

THE COURT: Dr. Gomes, thank you very much for your time and testimony, sir.

THE WITNESS: Thank you.

THE COURT: Safe travels home.

I know Mr. Schmidtlein is anxious to get home and get changed into his elf costume and go trick or treating.

MR. SCHMIDTLEIN: This is my permanent costume I'm afraid, Your Honor.

THE COURT: Antitrust lawyer, scariest costume around.

MR. SCHMIDTLEIN: Exactly, exactly. Your Honor, we are sort of concluded for today. We had hoped to have some deposition video for a couple of witnesses. Through some technical -- we're still conferring with them on a couple of issues, but that's on us. We will have -- Ms. Elizabeth Reid will testify first thing tomorrow. And then we will have our video issues straightened out, and we will expect -- depending on the time of when Ms. Reid concludes, we will present testimony from Eric Christensen from Motorola, and if necessary, if we still have time, Mitchell Baker from Mozilla.

We have also been working with their counsel in an effort to try to come to agreement that all of the video testimony that we and our colleagues are counter-designating may be shown in public. And we're -- I think we're close to getting all of that resolved, but there may be a couple of loose ends there where their counsel may want to come in and try to lodge some objections, not to the playing, but to whether it should be played in public. So we have alerted them, and we've asked them to be present tomorrow so that we can resolve those efficiently.

THE COURT: Maybe I'm confused, Mr Schmidtlein. So are the video depositions of Mr. Christie and --

MR. SCHMIDTLEIN: Christensen.

THE COURT: Christensen, and --

MR. SCHMIDTLEIN: And Ms. Baker.

THE COURT: Ms. Baker, okay. So those are the video depositions you're seeking to play?

MR. SCHMIDTLEIN: Yes, Your Honor.

THE COURT: I see, okay.

MR. SCHMIDTLEIN: And those would come after Ms. Reid's live testimony tomorrow. And then we will have Dr. Israel, one of Google's experts on market definition issues, will be here on Thursday. And we expect he will take all day Thursday, and probably spill into Friday.

THE COURT: Okay. And Ms. Reid is? Is she a Google

employee?

MR. SCHMIDTLEIN: Oh, I'm sorry, yes, she is a Google executive.

THE COURT: And any expectation of a request for a closed session with her tomorrow?

MR. SCHMIDTLEIN: Not in connection with the direct.

THE COURT: Okay, terrific.

MR. DAHLQUIST: We don't know yet, but we do not anticipate anything on the cross.

THE COURT: So we'll just, consistent with our practice -- and I appreciate it, we'll just post something about Mr. Christiansen and Mr. Baker's potential video testimony -- Ms. Baker, I'm sorry.

MR. SCHMIDTLEIN: As I said, I will be in a position to report to you first thing tomorrow as to whether there are any open issues. And if there are, what I would propose to do is to hand the transcript portions that are under discussion -- or have been objected to so that you'll have those during the day. And if you want to hear argument in between or you want to take a look at those over the lunch break, you'll be able to do that.

THE COURT: Okay, very good. Anything else?

Mr. Dintzer.

MR. DINTZER: Yes, Your Honor. Two weeks ago when we raised the issue of getting a fuller understanding of

Google's order in witnesses, the Court asked Google to fill out the rest of their proposed calls so that the Court could plan its schedule -- and of course we would also appreciate that so we could plan for the witnesses. We have gotten some information, but we have not gotten the rest of it filled out. Everything's in their hands now. We don't see any reason why they can't just -- I mean, I know they want to surprise us all, it is Halloween. But everybody else -- right now they have three -- six fact witnesses not identified for the ones that they've told the Court, and three experts --

THE COURT: I'm sorry, what do you mean, six fact witnesses --

MR. DINTZER: Six fact witnesses reside on their witness list -- they've told us that some are not coming. They have six fact witnesses residing on their witness list, and three experts residing on their witness list for after this week. They have told us that they don't expect to go past the 14th. But other than that, at this point, Your Honor, for everybody's planning, if they told us all who they're going to call and when, we could all plan and this could be a lot more orderly for us.

So the Court did ask, and we've been nudging them and they gave us a little. But we would ask the Court to ask them to just give it to us all this evening so we can just

finish our planning. Presumably they have it at this point.

THE COURT: Okay. Mr. Schmidtlein, where are we on remaining witnesses?

MR. SCHMIDTLEIN: We were -- consistent with the order, we are evaluating every witness. We are going to probably pull some more witnesses off, and we were going to get that to them tomorrow which is the day that we are due to get them to them. And to be clear, we did tell them of several witnesses who we were not going to be calling in light of how things are progressing.

THE COURT: So tomorrow, do you expect that you will --

MR. SCHMIDTLEIN: We will provide them with next week and the following week.

THE COURT: Okay. So that at least --

MR. SCHMIDTLEIN: That's it, the end of our case.

THE COURT: So you'll have those names tomorrow.

MR. DINTZER: Thanks, Your Honor.

THE COURT: All right. So I think that's helpful to know, it keeps us on track to finish either the week of the 13th or maybe a little bit after.

Mr. Cavanaugh, did you want to add anything?

MR. CAVANAUGH: No, nothing further, Your Honor.

THE COURT: Anything else we need to discuss?

MR. DINTZER: Not from the DOJ plaintiffs, Your Honor.

MR. SCHMIDTLEIN: No, Your Honor.

THE COURT: Thank you, all. We'll see you in the morning.

(Proceedings adjourned at 3:46 p.m.)

C E R T I F I C A T E

I, **Jeff M. Hook, Official Court Reporter,** certify that the foregoing is a true and correct transcript of the record of proceedings in the above-entitled matter.

October 31, 2023

DATE

Jeff M. Hook

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