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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

HEADWATER RESEARCH, LLC.,	(CAUSE NO. 2:23-CV-103-JRG
)	
Plaintiff,	(
)	
vs.	(
)	
SAMSUNG ELECTRONICS CO., LTD.,	(
et al.,)	MARSHALL, TEXAS
	(APRIL 23, 2025
Defendants.)	8:30 A.M.

VOLUME 3

TRIAL ON THE MERITS

BEFORE THE HONORABLE RODNEY GILSTRAP
UNITED STATES CHIEF DISTRICT JUDGE
and a jury

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1 THE COURT: Be seated, please.

08:30 2 Are the parties prepared to read into the record those
3 items from the list of pre-admitted exhibits used during
4 yesterday's portion of the trial?

5 MS. FAIR: Yes, Your Honor.

6 MS. SMITH: Yes, Your Honor.

7 THE COURT: Please proceed.

8 MS. FAIR: Yesterday Plaintiff admitted JX 10, 13,
08:30 9 28, 29, 37, 38, 44, 50, 56, 66, 71, and 72, as well as PTX 91,
08:31 10 100, 102, 162, 335, 343, 362, 364, 379, 393, and 436, and DTX
11 20.

12 THE COURT: Any objection from Defendants?

13 MS. SMITH: No, Your Honor.

14 THE COURT: Do Defendants have items to read into
15 the record?

16 MS. SMITH: We do, Your Honor. Samsung used JX 40
17 and JX 55.

18 THE COURT: Any objection from Plaintiff?

19 MS. FAIR: No, Your Honor.

08:31 20 THE COURT: All right, counsel. Thank you.

21 All right. We were in the middle of the direct
22 examination of Ms. Roberts when we left yesterday. Is
23 somebody intending to use this easel or has it just been moved
24 up there inadvertently?

25 MR. MIRZAIE: Apologies, Your Honor. I did move it.

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1 Should I move it back?

08:32

2 THE COURT: Put it back where it was. When you're
3 at the podium, just ask me and you can move it up to the usual
4 position.

5 MR. MIRZAIE: Understood, Your Honor.

6 THE COURT: All right. Ms. Roberts, would you
7 return to the witness stand, please.

8 And, Ms. Smith, you may go to the podium.

9 And while they're doing that, bring in the jury.

10 (Whereupon, the jury entered the courtroom.)

08:32

11 THE COURT: Welcome back, ladies and gentlemen.
12 It's good to see you. Please have a seat.

13 When we recessed for the day yesterday, Ms. Rachel
14 Roberts, the corporate representative of the Defendants, was
15 on the witness stand being examined by Defense counsel, Ms.
16 Smith. And we'll continue that direct examination at this
17 time.

18 Please proceed, Ms. Smith.

19 MS. SMITH: Thank you, Your Honor.

20 RACHEL ROBERTS,

21 having been previously duly sworn, testified further under
22 oath as follows:

23 DIRECT EXAMINATION, continued

24 BY MS. SMITH:

25 Q. Good morning, Ms. Roberts.

1 A. Good morning.

08:33

2 Q. Welcome back.

3 Now, you were here yesterday for my conversation with Dr.
4 Groehn. Correct?

5 A. Yes, ma'am.

6 Q. And Dr. Groehn discussed a conjoint survey that he did.

7 A. Yes, ma'am.

8 Q. Has Samsung had an occasion to do its own conjoint
9 surveys?

10 A. Yes, ma'am.

08:33

11 Q. How often in doing those conjoint surveys at Samsung does
12 Samsung take a survey involving different products, different
13 features, different technology than what's at issue and try to
14 recycle it or reuse it?

15 A. So those surveys would still just be a snapshot in time,
16 so we often rerun surveys just to make sure that we are
17 accurately capturing current sense within the marketplace.

08:34

18 Q. But you couldn't take that snapshot in time and apply it
19 to a different time, could you, a different time period, for
20 example?

21 A. You could, but it wouldn't necessarily be as accurate as
22 a brand new survey.

23 Q. Wouldn't be reliable, would it?

24 A. Correct.

25 Q. Okay. Now, to be clear, does offering a device with push

1 notifications drive customers to buy Samsung smartphones?

2 A. No, it does not.

08:35

3 Q. When we left off yesterday, we were discussing Samsung's
4 use of push notifications for marketing. Do you recall that?

5 A. Yes, ma'am.

6 Q. Okay. Does Samsung's ability to send customers push
7 notifications sell more Samsung devices?

8 A. No, it does not.

9 Q. Okay.

10 MS. SMITH: If we could take a look at JX 40, page
11 17.

12 Q. (BY MS. SMITH) Ms. Roberts, does this document look
13 familiar?

08:35

14 A. Yes, it does.

15 Q. Okay. And I'm going to direct your attention to the
16 bottom of the page. What do these survey results show us
17 about Samsung's use of push notifications for I believe we're
18 looking at the Note20 here. Is that correct?

19 A. Correct. So this was the Galaxy Note20 launch, and this
20 is referencing online information sourced among Samsung
21 shoppers that are considering buying a Samsung device. And 18
22 percent had cited push notifications/text message from a
23 wireless carrier or phone brand.

08:35

24 Q. Okay. Now, there's no dispute that Samsung uses push
25 notifications to communicate with its consumers. Correct?

1 A. That is correct.

2 Q. Is it fair that even occasional use in certain campaigns,
3 that that use can cause the number of push notifications to
4 be -- to be large, to add up?

5 A. That is correct.

6 Q. Whether you have a million push notifications or a
7 billion push notifications, in your 20 years' experience in
8 this industry and 10 of those at Samsung, are push
9 notifications a driver of sales in smartphones and tablets?

10 A. No, they are not.

11 Q. Okay. Circling back to battery life, has Samsung had an
12 occasion to isolate attributes in its surveys such as battery
13 life to see if an increase in battery life impacts unit sales
14 and sales of smartphones?

15 A. We have.

16 Q. Okay. When doing that research, did Samsung test five
17 percent or 10 percent or a greater increase in battery life?

18 A. We tested a greater increase.

19 Q. So in your 20 years' experience in the industry, 10 at
20 Samsung, is a small increase in battery life, a few hours, a
21 driver for purchasing smartphones and tablets with consumers?

22 A. No, it is not.

23 Q. Okay. So, Ms. Roberts, in conclusion, what do you say
24 to -- in response to Headwater's claims that push
25 notifications or a small increase in battery life of a couple

08:37 1 of hours increases Samsung's ability or helps Samsung sell
2 consumers smartphones and tablets?

3 A. I would absolutely disagree. That's not been my
4 experience and that's not been shown in our research.

5 Q. Ms. Roberts, I am grateful for your time. Thank you.

6 MS. SMITH: And, Your Honor, I'll pass the witness.

7 THE COURT: All right. Cross examination by the
8 Plaintiff.

9 MS. FAIR: Yes, Your Honor. May we have leave to
10 distribute binders?

11 THE COURT: You may have leave to distribute cross
12 examination binders.

08:38

13 All right, Ms. Fair. You may proceed with cross
14 examination.

08:38

15 MS. FAIR: Thank you, Your Honor.

16 CROSS EXAMINATION

17 BY MS. FAIR:

18 Q. Good morning, Ms. Roberts.

19 A. Good morning.

20 Q. We've exchanged a couple of pleasantries in the
21 courthouse, but we haven't officially met. I'm Andrea Fair.
22 I represent Headwater?

23 A. Nice to meet you.

24 Q. You're here as Samsung's corporate representative at this
25 trial. Right?

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1 A. That is correct.

2 Q. And you understand that the jury is going to be asked
3 three questions at the end of this trial. Right, Ms. Roberts?

08:39

4 A. Yes, ma'am.

5 Q. They're going to be asked about infringement, validity,
6 and damages.

7 A. That is correct.

8 Q. And you're not here talking about any of these. Right?
9 You told us about who's coming to tell us about infringement,
10 validity, and damages for Samsung?

11 A. That is correct.

12 Q. You're here as Samsung's marketing representative.
13 Right?

14 A. I'm here as Samsung's corporate representative.

15 Q. And you're in marketing?

16 A. I am.

17 Q. You're someone who gets on stage for Samsung. We saw
18 your video yesterday. Right?

19 A. Yes, ma'am.

08:40

20 Q. And you've worked at Samsung for almost 10 years now?

21 A. Yes, ma'am.

22 Q. They've treated you well. Right?

23 A. Yes, ma'am.

24 Q. Dream come true, you told us yesterday they gave you.
25 Right?

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1 A. Yes, ma'am.

2 Q. You do your best for Samsung. Right, Ms. Roberts?

3 A. Absolutely.

4 Q. We've heard a lot about Google in this trial. You've
5 been sitting here hearing about that. Right?

6 A. Yes, ma'am.

08:40

7 Q. And I think yesterday you even called it the accused
8 Google server that we were going to hear another witness
9 testify about. Sound familiar?

10 A. Yes, ma'am.

11 Q. You're not here as Samsung's corporate representative
12 trying to say that it's Google's fault anything that we're
13 accusing Samsung of. Right?

14 A. No, ma'am.

15 Q. You sat through Mr. de la Inglesia's presentation about
16 infringement. Right?

17 A. Yes, ma'am.

08:40

18 Q. And you remember the '733 Patent that's at issue in this
19 case?

20 A. Yes, ma'am.

21 Q. It's directed to devices. Right, Ms. Roberts?

22 A. Yes, ma'am.

23 Q. And the end-user devices that are accused in this case
24 are Samsung's devices. Correct, Ms. Roberts?

25 A. Yes, ma'am.

1 Q. They're not Google's. Right?

2 A. That is correct.

3 Q. And I believe you testified yesterday that if it's sold
08:41 4 in the U.S. market, it goes through SEA. Correct?

5 A. That is correct.

6 Q. And that's Samsung America. Right?

7 A. That is correct.

8 Q. Not Google.

9 A. That is correct.

10 Q. And Samsung also chooses which system it's going to use
11 for push notifications. Right?

12 MS. SMITH: Objection, Your Honor. That's a
13 technical opinion beyond sales and marketing, which servers
14 Samsung uses or chooses.

08:41 15 MS. FAIR: Your Honor, she's here as Samsung's
16 corporate representative. I'm not asking her about the
17 architecture. I'm asking her about Samsung's choice --

18 MS. SMITH: -- of servers.

19 THE COURT: I understand. The problem is she is the
20 corporate representative for Samsung on all issues that may
21 arise in the trial. We can't have 16 different corporate
22 representative and each of them has a little cubby hole of
23 expertise. So she can't be limited to marketing when it suits
08:42 24 and be able to talk in general for the company when it suits
25 the other way.

1 If she has knowledge and she can address the question,
2 she can do that. If she doesn't know, she'll just have to say
3 she doesn't know, but I can't exclude it because it's beyond
4 marketing and all of the sudden now she's just a marketing
5 person.

6 She is the general representative for the companies on
7 all issues, and so I'm not going to constrain her -- the scope
8 of her presence here just because it's beyond marketing. So
9 I'll overrule the objection with that explanation.

08:42 10 MS. SMITH: Understood. And, Your Honor, one point
11 of clarification. Yesterday opposing counsel objected and
12 kept her from testifying on issues that dealt with the fact
13 that she had an electrical engineering degree and she had an
14 understanding of the features. May she freely testify about
15 those topics?

16 THE COURT: She can freely testify about the
17 company's position on any matter, she can freely testify about
18 the issues she has personal knowledge of. What she can't do
08:43 19 is become an on-the-spot expert witness because she has a
20 Bachelor's degree in electrical engineering and start talking
21 about what an expert witness in technical matters would talk
22 about.

23 MS. SMITH: Understood.

24 THE COURT: Okay?

25 MS. SMITH: Thank you, Your Honor.

1 THE COURT: Let's proceed.

2 Q. (BY MS. FAIR) Ms. Roberts, you were here when we saw Mr.
3 Jwa's testimony. Right?

4 A. Yes, ma'am.

5 Q. And so you know that it was Samsung's choice to use
6 Google Firebased Cloud Messaging. Correct?

7 A. That is what he stated in his deposition that was played
8 in the courtroom, yes, ma'am.

08:44 9 Q. Company policy to use Google. Right?

10 A. That is what he stated in his deposition, yes, ma'am.

11 Q. You have no reason to dispute that, do you, Ms. Roberts?

12 A. I do not.

13 Q. Samsung made that choice for a reason, didn't it?

14 A. I can't comment on that.

15 Q. Well, Samsung wouldn't just implement a company policy
16 without carefully considering it, would it?

08:44 17 A. I'm not going to speculate.

18 Q. I mean, when -- when Samsung makes choices, it weighs the
19 costs and the benefits. Wouldn't you expect that, Ms.
20 Roberts?

21 A. In general, yes, I would expect that.

22 Q. And Samsung gets to use Google's system and gets to share
23 in the revenues. Right? You heard that testimony yesterday.

08:44 24 A. I heard that testimony yesterday, yes.

25 Q. And you're not here to deny that the revenue share that

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1 we heard about yesterday applies to the technology in this
2 case, are you?

3 A. Can you re-ask that question?

4 Q. Sure. We heard about the revenue share. We can't say
5 the percentage in open court. But the revenue share that
08:45 6 Samsung gets from Google. You're not here to deny that that
7 applies to the technology in this case. Right?

8 A. I am not aware of the contractual agreements and revenue
9 shares, no, ma'am.

10 Q. I want to talk a little bit about push messaging. Okay?

11 A. Okay.

12 Q. We're all familiar with these notifications we get on our
13 phones. Right, Ms. Roberts?

14 A. I would assume so, yes.

15 Q. And some of those come from -- if I have a Samsung phone,
08:45 16 which I actually do, some of those notifications that I might
17 get come from Samsung. Fair?

18 A. Fair.

19 Q. And some come from other apps that I have installed on my
20 phone. Fair?

21 A. Fair.

22 Q. And so the ones that I get from Samsung, that's through
23 something called Samsung messaging platform. You're familiar
24 with that?

08:46 25 A. I am not aware of all the system specifics and how those

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1 messages are sent, no, ma'am.

2 Q. Did you know that general push messages from Samsung,
3 they don't require an opt-in? You know that. Right?

4 A. There are certain messages that wouldn't require an
5 opt-in.

6 Q. For example, I might get a software update from Samsung.
7 Right?

8 A. That is one example, yes.

08:46 9 Q. I might get tips and tricks about how to use my phone?

10 A. That is an example, yes.

11 Q. And I got one I think on Monday telling me about a
12 functionality that is on the new S25. Sound right?

13 A. That is possible, yes.

14 Q. And these messages come directly from Samsung. Correct?

15 A. That is correct.

08:47 16 Q. They come from your Samsung, Samsung America. Right, Ms.
17 Roberts?

18 A. I am not fully aware, no.

19 Q. To people in the United States. Right?

20 A. I'm not fully aware of the specific architecture there,
21 no.

08:47 22 Q. You're not suggesting that someone other than Samsung
23 America sends the notifications to people in the United
24 States, are you?

25 A. I'm not suggesting that. I'm just not aware of the full

1 architecture and the flow of that specific push notification.

2 Q. Ms. Roberts, Samsung chooses when to push the
3 notifications to its users. Right?

08:48 4 A. That is correct.

5 Q. And you choose what push notifications to send out, what
6 it's going to say?

7 A. We do.

8 Q. And you choose which device it goes to?

9 A. We do.

10 Q. And you know that because at Samsung America that sends
11 those push notifications, you're the marketing arm of Samsung
12 in the United States. Right?

13 A. I am.

08:48 14 Q. You understand that in this lawsuit, Samsung's position
15 is that there is no other way to send push notifications other
16 than the technology that we're accusing. You understand
17 that's Samsung's position?

18 A. Can you state that one more time, please?

19 Q. Yes. You understand that in this lawsuit Samsung's
08:49 20 position is that there is no alternative, no non-infringing
21 alternative, other than the technology accused in this case
22 for push notifications. Correct?

23 MS. SMITH: Objection, Your Honor. I understand
24 that she can speak about Samsung's position, but we're in the
25 weeds on non-infringing alternatives and that's just so far

1 afield from marketing and sales.

08:49

2 THE COURT: So your objection is what, Ms. Smith?

3 MS. SMITH: I'm also told Court MIL No. 1 dropped
4 claims and defenses.

5 THE COURT: All right. Approach the bench, ladies.
6 Let me have lead counsel up here, too.

7 (The following was had outside the hearing of the
8 jury.)

08:50

9 THE COURT: All right. I've got you two up here for
10 a different reason. With regard to you two, I do think you're
11 going into matters that are not proper given the dropped issue
12 of non-infringing alternatives.

13 MS. FAIR: I don't intend to elicit that they ever
14 asserted it. I just think we are entitled to a clean
15 admission in front of the jury that Samsung is not asserting
16 that there are any non-infringing alternatives. That's all
17 I'm trying to establish.

08:50

18 And if it's better done through a stipulation that we can
19 read to the jury or can otherwise present very clearly to the
20 jury, I'm happy to go that route. I just thought the
21 corporate representative would be the appropriate place for
22 that clean clarification as to what's being asserted in this
23 case.

24 MS. SMITH: May I respond, Your Honor?

25 THE COURT: Please.

1 MS. SMITH: I'm crystal clear on Your Honor's
2 instruction, but Samsung MIL 1 disallows them from going into
3 topics beyond marketing and sales. She has no idea about
4 non-infringing alternatives. She -- Samsung's MIL 1, Your
08:51 5 Honor. They can't even if ask her if she's read the patents,
6 and then they're diving into the non-infringing alternatives.

7 MS. FAIR: If we can do a stipulation in front of
8 the jury, that's fine. I'm not trying to do anything --

9 MR. McKEON: May I comment on that, Your Honor? The
10 issue is this: It's not that we're --

11 THE COURT: Just a minute, Mr. McKeon.

12 MR. McKEON: Okay. Sorry.

13 THE COURT: I don't have time for everybody to take
14 a turn.

15 MR. McKEON: Yeah. Sorry.

08:52 16 THE COURT: All right. I've reviewed Samsung's MIL
17 1. I think your question goes too far with this witness, Ms.
18 Fair.

19 If you can elicit a stipulation from the other side and
08:52 20 if you-all want to offer it, then come back to the bench and
21 let me know what it is and we'll talk about how it's going to
22 be given to the jury.

23 Whether I'm going to give them an instruction that the
24 parties have stipulated, whether we're going to include it in
25 the final instructions, I want to be involved in any delivery

1 mechanism if there is a stipulation.

2 But I'm going to sustain the objection to this question
3 to this witness. Okay?

4 MS. FAIR: Understood.

5 THE COURT: Now, you two gentlemen are here for this
08:52 6 reason. We had a lengthy discussion this morning about a big
7 swath of slides to be used with Dr. Foster that I carried. I
8 told you I would talk about it over the next recess.

9 What I don't want to get -- what I don't want to happen
10 is I get everybody back to chambers over the recess and then
11 Samsung comes up with support and one of them says, well,
12 we've never seen this, we don't know what it is, and our time
13 evaporates.

08:53 14 If Samsung can provide accurate supporting citations to
15 Dr. Foster's report for those slides, I'll permit them. But
16 without supporting accurate citations to his report, your
17 position that they're supported by the general tenor of his
18 report is not going to be sufficient.

19 MR. McKEON: Understood.

20 THE COURT: But if you have supporting references
08:53 21 that are specific, targeted, you need to give them to Mr.
22 Fenster or your team needs to exchange them before we get to
23 chambers over the recess so at least Mr. Fenster's team can
24 have an opportunity to have looked at them. Otherwise, we are
25 going to accomplish nothing over the recess. Okay?

1 MR. McKEON: Got it, Your Honor.

2 THE COURT: That's why I wanted you up here.

3 MR. McKEON: Got it, Your Honor.

4 THE COURT: All right. Let's proceed.

5 MR. McKEON: Thank you.

6 (The following was had in the presence and hearing
7 of the jury.)

08:54 8 THE COURT: All right. For the record, I've
9 sustained the objection. Let's proceed.

10 Q. (BY MS. FAIR) You were telling us yesterday about how
11 customers don't appreciate or don't like push notifications.
12 You remember talking about that?

13 A. There are some customers that don't like or appreciate
14 push messages, push notifications, yes.

15 Q. Just to be clear, Samsung has never removed push
16 notification capability from its phones. Correct?

08:55 17 A. That is my understanding.

18 Q. The very next thing you showed us, I think, after talking
19 about how consumers have a negative view, negative sentiment I
20 think was your language, of push notifications was a study
21 that Samsung did. You remember that?

22 A. I do.

08:55 23 Q. I just want to clarify why this study was done. Okay?

24 This study -- in June of 2022, Samsung Electronics
25 Company, that's your parent company. Right?

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1 A. That is correct.

2 Q. Asked you-all about push notifications. Right?

3 A. That is correct.

08:55

4 Q. You got a question from headquarters saying, we want to
5 understand users' preferences for push notifications. Right?

6 A. That is my understanding, yes.

7 Q. And I think you testified yesterday that this study was
8 done because there was already an understanding that there was
9 some negative sentiment for consumers that already don't want
10 to receive push notifications. You remember that?

11 A. I do.

08:56

12 Q. But, Ms. Roberts, the reality is you have no idea why
13 Samsung Electronics Company requested this study, do you?

14 A. Based on their request, we didn't have any existing
15 consumer survey information, so we were asked to survey
16 consumers on their preference and sentiment of push
17 notifications. That's stated in that document.

08:56

18 Q. It is stated in that document. Right, Ms. Roberts?

19 A. Yes, ma'am.

20 Q. And that is the only information you know about why this
21 study was done. Right, Ms. Roberts?

22 A. For that study, yes, ma'am.

23 Q. You don't know why headquarters asked for it. Right?

24 A. I do not, no.

25 Q. Nothing -- I'm sorry. I didn't mean to cut you off.

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1 A. I said that's right, I do not.

2 Q. Nothing more than what's on the face of this document.

3 Right, Ms. Roberts?

08:57 4 A. That's correct.

5 Q. And, in fact, someone named Ms. Samanta Paulino conducted
6 this study. Is that right?

7 A. That is correct.

8 Q. And you had to talk to her to learn whether a study like
9 this even existed.

10 A. That is correct.

11 Q. So this request comes in from headquarters and says,
12 let's find out what we can about push notifications. Correct?

13 A. That is correct.

08:57 14 Q. And you take requests from your parent company seriously.
15 Right?

16 A. We do.

17 Q. You want to do a good job responding to their requests,
18 don't you?

19 A. Absolutely.

20 Q. You want to put together a good team to answer the
21 questions they have. Correct?

22 A. It depends on the requests.

23 Q. I mean, you're not going to brush it off, are you?

24 A. I wouldn't think so.

25 Q. You're going to not put together a good team when they

08:58 1 ask you for information about consumer sentiments on push
2 notifications? Is that your testimony?

3 A. Depending on the request that comes in, it's the amount
4 of resources and everything else that is needed that there's a
5 lot to unpack with that question.

6 Q. You want to turn in a good work product to headquarters,
7 don't you, Ms. Roberts?

8 A. Yes, ma'am.

9 Q. After all, you'd expect that they're going to make
08:58 10 decisions based on this. Right? Why else look at consumer
11 sentiment if you're not going to use that information. Right,
12 Ms. Roberts?

13 A. We conduct a lot of surveys as a single reference point
14 of data. So whether or not it is or is not used, it depends
15 on the situation, the information that we're gathering.

08:59 16 MS. FAIR: Mr. Mahon, can we please have JX 28?

17 Q. (BY MS. FAIR) This is that study that you did for
18 headquarters. Right?

19 A. That is correct.

20 Q. And this was a U.S. study. Correct?

21 A. That is correct.

22 Q. And if we go to page 4 -- and this is the key findings
23 that Samsung put together as a result of this study. Correct?

09:00 24 A. That is correct.

25 Q. And the first heading is, "Convenient access to

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1 information make push notifications a valuable tool." Right?

2 A. That is correct.

3 Q. Not, consumers don't like it. Right, Ms. Roberts?

4 A. That's not what the document says, no.

5 Q. The document that was prepared to respond to
6 headquarters' request says it can be a valuable tool. Right?

7 A. That is correct.

09:00

8 Q. "There is a strong interest in push messages from
9 smartphone OEMs." That was a key finding of the study that
10 you did for headquarters. Right?

11 A. Yes, that is a key finding from the survey and the
12 respondents that responded to that survey.

13 Q. And Samsung America chose who to enlist in this survey.
14 Right, Ms. Roberts?

15 A. Yes. That's included on page 2 of this document.

09:00

16 Q. Yes. And Samsung chose how many people to survey when
17 they were reporting back to headquarters about the United
18 States consumer sentiments on push notifications. Fair?

19 A. That is fair.

20 Q. And this is -- this key findings right here is what
21 Samsung was saying about push notifications in 2022. Right?

22 A. That is correct.

23 Q. Outside of this courtroom before this lawsuit was filed.
24 Right, Ms. Roberts?

25 A. That is correct.

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09:01 1 MS. FAIR: And if we go to JX 29, please, Mr. Mahon.
2 Q. (BY MS. FAIR) This is, I believe, what you mentioned was
3 a one-page summary of the results of the study you-all did.
4 Right?
5 A. That is correct.
6 Q. This isn't fuzzy math, is it?
7 A. No, this is a summary of that survey data.
8 Q. And the very first thing that we see when you're turning
09:01 9 in your summary to headquarters is that [REDACTED] of Samsung
10 owners find push notifications to be helpful. Correct?
11 A. Of those consumers surveyed, yes, [REDACTED] of Samsung
12 owners find push notifications to be helpful, yes, ma'am.
13 Q. Of the consumers Samsung America chose to survey when you
14 were responding to headquarters' request. Correct?
15 A. That is correct.
09:02 16 Q. And in your findings to headquarters, you told them that
17 [REDACTED] of Samsung users subscribe to push notifications
18 from the OEM. That's messages coming from Samsung. Correct?
19 A. That is correct.
20 Q. And then what you told headquarters in the summary about
09:02 21 push notifications is that there is opportunity to engage.
22 Right, Ms. Roberts?
23 A. That's what this document says, yes, ma'am.
24 Q. This is the only document you've ever turned into
25 headquarters about what Samsung America knows about push

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1 notifications. Correct?

2 A. This summary as well as the supporting survey data that
3 we were looking at, that other exhibit.

4 Q. Yes, the summary is supported by data. Right, Ms.
5 Roberts?

6 A. That is correct.

09:03 7 Q. And with this survey in hand, Samsung has continued to
8 use push notifications. Right?

9 A. Yes, ma'am.

10 Q. I mean, this was in June 2022. Correct?

11 A. That is correct.

12 Q. And you told us yesterday that when you send out a
13 campaign direct notifications to a customer, it can add up,
14 could be millions, you said. Right?

15 A. That's possible, yes, ma'am.

16 Q. It could be billions of push notifications. Right, Ms.
17 Roberts?

09:03 18 A. It can certainly add up to billions, yes, ma'am.

19 Q. And you saw the document that Mr. Dell presented
20 yesterday that Samsung produced in this lawsuit of all of the
21 direct push notifications that Samsung sends to its customers.
22 You remember seeing that?

23 A. I remember seeing that slide, yes, ma'am.

24 Q. Would it surprise you to learn that if we looked at the
25 push notifications that Samsung has directly sent to consumers

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09:04 1 after this survey, that number is [REDACTED] push
2 notifications in just the two years after this study?
3 A. What's the question there? I'm sorry.
4 Q. Would that surprise you?
5 A. I mean, based on our marketing tactics, the number of
6 consumers that we have and the number of campaigns, you know,
7 that number sounds reasonable, yes.
09:04 8 Q. You continue to use them a lot after doing the only study
9 you've ever done. Right, Ms. Roberts?
10 A. I wouldn't quantify it as a lot. It is one of many
11 marketing tactics that Samsung utilizes.
12 Q. You don't think [REDACTED] messages is a lot?
13 A. It's a large number, yes, ma'am. I'm not disputing that.
14 MS. FAIR: Thank you, Mr. Mahon.
15 Q. (BY MS. FAIR) You talked a little bit this morning about
09:05 16 surveys and we heard some criticisms of Dr. Groehn's survey
17 yesterday. Do you remember that?
18 A. I didn't criticize Dr. Groehn's survey.
19 Q. You remember hearing the criticisms of his survey
20 yesterday. Right, Ms. Roberts?
21 A. Yes, ma'am.
22 Q. And part of the criticism that we heard yesterday was
23 that he only did one survey. Correct?
24 A. That is correct.
25 Q. And, in fact, I believe you emphasized that this morning.

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09:05 1 Right? We heard about one survey. Correct?

2 A. Yes, ma'am.

3 Q. Just to be clear, when headquarters asked for an

4 understanding of consumer views on push notifications, Samsung

5 America turned in one survey. Right, Ms. Roberts?

6 A. That is correct.

7 Q. Of 500 Samsung users. Correct?

8 A. I think it's slightly more than that, but that sounds

9 about right.

10 Q. 505 Samsung users?

11 A. That is what the document says.

12 Q. The others were non-Samsung users. Right?

13 A. That is correct.

09:06 14 Q. Now, you told us that Samsung does do conjoint surveys.

15 Correct?

16 A. Yes, we do.

17 Q. You have, I think you said, something like 15 to 20 teams

18 that work with you to figure out consumers' interests and what

19 they want and how to market products?

20 A. That is not correct.

21 Q. You know how to price your products. Right?

09:07 22 A. I'm not sure I really understand that question.

23 Q. You're the corporate representative of Samsung. Right,

24 Ms. Roberts?

25 A. That is correct.

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1 Q. And Samsung knows how to price its products. Right?

2 A. Yes.

3 Q. You know how to measure what people are willing to pay.

09:07 4 Right, Ms. Roberts?

5 A. We understand the different price points that consumers
6 are willing to pay for a product, yes, ma'am.

7 Q. And you're not here with any surveys to counter Dr.
8 Groehn, are you?

09:07 9 A. Specific for this litigation? No, ma'am.

10 Q. We're not going to see from Samsung any attempt to
11 measure what people are willing to pay for an increased
12 battery life. Correct?

13 A. No, ma'am.

14 Q. With all the teams you have that do conjoint surveys, you
15 didn't do one to refute Dr. Groehn, did you?

09:08 16 A. That is correct.

17 Q. I want to talk a little bit about battery life. Okay,
18 Ms. Roberts?

19 A. Yes, ma'am.

20 Q. Now, you know that sometimes, maybe a lot of the time,
21 technology provides benefits to the consumer where the
09:08 22 consumer may not know anything about the technology behind it.
23 Fair?

24 A. Fair.

25 Q. Consumers don't always know about the inner workings of

1 what's providing the benefits to them that they enjoy. Fair?

2 A. Fair.

3 Q. And as a marketing person, you would market the consumer
4 experience. Right, Ms. Roberts?

5 A. Yes, ma'am.

6 Q. Not the detailed system architecture behind it. Correct?

7 A. That is correct.

09:09 8 Q. And you know this case is about the inner workings the
9 backend architecture of push notifications that Samsung uses.
10 Correct?

11 A. That is my understanding, yes, ma'am.

12 Q. And so no one in this courtroom would be surprised that
13 Samsung is not marketing what messaging platform it uses.
14 Fair?

15 A. Fair.

16 Q. You do understand that Headwater's contention in this
17 case is that the patents provide battery savings. Right?

09:10 18 A. That is what I've heard, yes, ma'am.

19 Q. That is the consumer facing benefit that Headwater's
20 position is that these patents provide. Right?

21 A. I understand that's Headwater's position, yes.

22 Q. You get a longer battery life.

23 A. I understand that's Headwater's position, yes, ma'am.

09:10 24 Q. And battery life is important. Right, Ms. Roberts?

25 A. Absolutely.

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1 Q. A phone's battery consumption isn't shrinking, is it?

2 A. I would say no.

3 Q. I mean, the screens are getting more sophisticated,
4 they're getting bigger, the lights are brighter, more apps,
5 more connectivity. All of that drains battery. Right, Ms.
6 Roberts?

7 A. Correct.

09:11

8 Q. It's a constant battle making sure that your battery can
9 keep up with all of the new features on a phone. Right, Ms.
10 Roberts?

11 A. Fair.

12 Q. And you're not planning to decrease battery life. Right?

13 A. No, ma'am.

14 Q. And in terms of battery size, I think you told us, well,
15 you can just use a bigger battery. Right? That can help you
16 get more battery life?

17 A. A bigger battery does provide more battery life, yes,
18 ma'am.

09:11

19 Q. But you can't just take a phone and pop in a bigger
20 battery. Right, Ms. Roberts?

21 A. No, you cannot.

22 Q. I mean, in terms of these phones, there's not a lot of
23 extra space in the case of this phone, is there?

24 A. Fair.

25 Q. You maximize every square millimeter you've got. Right?

1 A. That would be my assumption, yes.

2 Q. I mean, these phones are designed years out. Right? The
3 S25 was under design for a long time before it was launched.
4 Correct?

5 A. I can't comment on that.

09:11 6 Q. You don't think it's taken months, if not years, to
7 figure out exactly how to position what's in the phone?

8 A. I'm not the engineer that's developing this product so I
9 cannot comment on how long it takes to develop that phone's
10 architecture or the blueprint of that product.

11 Q. And once that phone is designed, you can't just put a
12 little bit bigger battery in it, can you?

09:12 13 A. From my understanding, I would say no. But, again,
14 that's not my area of expertise.

15 Q. If you put a little bit bigger battery in than fits, that
16 can cause some problems. Right, Ms. Roberts?

17 THE COURT: Counsel, she is the corporate
18 representative, which means she's free to speak on behalf of
19 Samsung. That doesn't mean she knows everything about every
20 aspect of the company, and her experience is clearly outside
09:12 21 of the engineering technical inquiries that you seem to be
22 going into.

23 We can't have a corporate representative that knows 100
24 percent about everything that happens and goes on within a
25 company, so every corporate representative has the limits of

1 what they know. But that doesn't mean they're prohibited from
2 setting forth and giving the jury the position of the company.

09:13 3 By the same token, no corporate representative, because
4 they're corporate representative, can suddenly start offering
5 opinions and speculating and acting like an expert witness.
6 So there are unique contours to the posture of a corporate
7 representative, and these kinds of technical questions about
8 battery capacity and design of the products is clearly beyond
9 what she knows personally, and I do not think you need to be
10 going into that with her.

11 MS. FAIR: Yes, Your Honor.

12 THE COURT: Okay?

13 MS. FAIR: Yes, Your Honor.

09:14 14 THE COURT: I hope that's helpful.

15 MS. FAIR: Yes, Your Honor. I just was trying to
16 respond to her testimony yesterday about just putting a bigger
17 battery in the phone.

18 THE COURT: I understand.

19 Q. (BY MS. FAIR) You told us yesterday consumers make
20 decisions based on brand and price. That's the primary first
21 steps of that funnel you told us about?

22 A. Those are some of the main factors that go into their
23 purchase decision, yes, ma'am.

24 Q. I think you said it was the first two factors that go
25 into their purchase decision?

1 A. That's the main two, yeah.

09:14

2 Q. Now, if Samsung's phones had inferior battery life, that
3 would be bad for your brand. Right?

4 A. Inferior --

5 Q. Battery life.

6 A. To a competitor product? Yes, that would be bad.

7 Q. And, in fact, you've had that experience before. Right,
8 Ms. Roberts?

9 A. Yes, ma'am.

09:14

10 Q. I think you said on your -- in your testimony yesterday
11 that Samsung had used its marketing term all-day battery life
12 since 2016. You remember that?

13 A. Yes, ma'am.

14 MS. FAIR: Mr. Mahon, can we please have JX 13?

15 Q. (BY MS. FAIR) And in 2016, you are familiar with this
16 document. Right, Ms. Roberts?

17 A. Yes, ma'am.

18 Q. You-all did an analysis of -- a competitive analysis of
19 real-world battery life. Correct?

09:15

20 A. That is correct.

21 Q. And you did this study because battery matters to
22 consumers. Right, Ms. Roberts?

23 A. Yes, ma'am.

24 Q. And at this time, the Galaxy S6 had a shorter life that
25 wasn't enough for consumers. Correct?

1 A. That is what this document does an analysis on, yes,
2 ma'am.

09:15 3 MS. FAIR: And if we go to page 8, Mr. Mahon?

4 Q. (BY MS. FAIR) This is a bar chart where Samsung is
5 comparing the battery lives of several models of phone.
6 Correct, Ms. Roberts?

7 A. That is correct.

8 Q. And the yellow circled ones are Samsung phones. Correct?

9 A. That is correct.

10 Q. And the GS5 that we see, that's Galaxy S5. Correct?

11 A. That is correct.

09:16 12 Q. And GS6, all the way on the right, is the Galaxy S6. Is
13 that correct?

14 A. That is correct.

15 Q. And it has more than a 24-hour battery life. Correct?

16 A. That is correct.

17 Q. But even -- and this ■ 6S, that's the Apple phone.
18 Correct?

19 A. That's the iPhone 6S, yes, ma'am.

09:16 20 Q. And even with the highest performing Samsung battery in
21 this bar chart, what we see Samsung's comment is that it lags
22 behind the key competitors. Right?

23 A. Yes, that's what the document says.

24 Q. Even though it's only behind by a little more than two
25 hours of battery life. Correct?

1 A. That's what the document says, yes.

2 Q. That was enough for Samsung to comment on lagging behind
3 Apple. Right?

4 A. In this analysis, yes, ma'am.

09:17

5 Q. And if we go to page 9, this is a line graph comparing
6 the Galaxy S6 to the Apple [REDACTED]?

7 A. [REDACTED].

8 Q. 6S?

9 A. That is correct.

10 Q. And we see that -- we start with a 100 percent charge at
11 6:00 a.m.

09:17

12 A. Uh-huh.

13 Q. Correct?

14 A. That is correct.

15 Q. And by 5:00 p.m., the Samsung phone is dead.

16 A. That's what it shows, zero percent.

17 Q. And what that means is that you're looking for a charger
18 before you even get home from work. Correct, Ms. Roberts?

19 A. Depends on when you get home from work, but yes in
20 premise.

09:18

21 Q. If we go to page 10, that mattered to consumers. Right,
22 Ms. Roberts?

23 A. That was a feedback from consumers, yes, ma'am.

24 Q. I mean, we see here that U.S. media uses general daily
25 battery usage testing--that's what we've been looking at--as a

1 primary input for purchase recommendations. Correct?

2 A. That is correct.

09:18

3 Q. That's how people are deciding to buy their phones.
4 Correct?

5 A. That is one of the ways that consumers are planning to
6 buy phones, yes, ma'am.

7 Q. And what we're not seeing, This is no problem, we're good
8 to go, our brand will carry us through, are we, Ms. Roberts?

9 A. That's not what's on this page, no, ma'am.

10 Q. It says, "Need to ensure that [REDACTED] is positioned well."
11 Right, Ms. Roberts?

12 A. That is what it says, yes, ma'am.

13 Q. And what does [REDACTED] tell us?

09:19

14 A. [REDACTED] is a code name for the next Galaxy S device.

15 Q. You were behind by a couple of hours and had to get it
16 fixed. Right?

17 A. This was recommending that we need to get it better
18 positioned, yes.

19 MS. FAIR: Thank you, Mr. Mahon.

20 And if we go to JX 30.

21 Q. (BY MS. FAIR) That study we just looked at was in 2016.
22 Right, Ms. Roberts?

23 A. Yes, ma'am.

09:19

24 Q. And this is just fast forward a couple of years to May of
25 2019. We see that.

1 A. Yes, ma'am.

2 Q. Battery still matters at this time. Right, Ms. Roberts?

3 A. Yes, ma'am.

4 MS. FAIR: And if we go to page 12, Mr. Mahon.

5 Q. (BY MS. FAIR) We see the top upgrade drivers is what
6 this page is looking at. Correct?

09:20 7 A. That is correct.

8 Q. And the number one reason is because people wanted a
9 longer battery life. Correct?

10 A. Among S10 buyers and their top reasons to upgrade from a
11 prior phone, yes, it was indicated they wanted a longer
12 battery life.

13 Q. That's Samsung's flagship phone. Right?

09:20 14 A. That's one of Samsung's flagship phones, yes.

15 Q. And the reason people were upgrading to it was because of
16 the battery life. Fair? That's what Samsung's document says.

17 A. That's one of the top reasons as indicated on the survey,
18 yes, ma'am.

19 Q. A document that Samsung prepared outside of court before
20 this litigation. Right, Ms. Roberts?

21 A. That is correct.

22 Q. And if we fast forward a couple of more years.

09:21 23 MS. FAIR: Mr. Mahon, can we please go to JX 55?

24 I'm not sure if other screens are showing, but this one's
25 gone down. Are they all...

09:21 1 Ms. Brunson, may we have the document camera?
2 THE COURT: Looks like the gremlins are at work
3 again. There is the document camera.
4 Q. (BY MS. FAIR) You see this JX 55, Ms. Roberts?
5 A. Yes, ma'am.
6 Q. I think you showed us this yesterday.
7 A. I believe we did, yes, ma'am.
09:22 8 Q. And this is -- when did the S23 come out?
9 A. That was in 2023.
10 Q. And so this would have been at some point after the S23?
11 A. That is correct.
12 Q. Or at least around the time of the S23.
13 A. That is correct.
14 Q. So we're a few years later and we've got another Samsung
09:22 15 document, and I think you showed us yesterday, again, battery
16 life and power efficiency are at the top of the list. Right,
17 Ms. Roberts?
18 A. Yes, that battery life and power efficiency are ranked at
19 80 percent in the top five among total shoppers of the survey,
20 yes, ma'am.
21 Q. The survey Samsung chose to conduct. Correct?
22 A. That is correct.
23 Q. With the people Samsung chose to conduct the survey on.
24 Correct?
25 A. Correct.

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09:23 1 Q. These are what makes Samsung's brand marketable. Right,
2 Ms. Roberts?

3 A. These are one of the many features that makes Samsung's
4 brands marketable, ma'am.

5 Q. The battery life and power efficiency is the number one
6 pillar, the number one marketing pillar according to Samsung's
7 document outside of court. Right, Ms. Roberts?

09:23 8 A. For this specific survey on this specific device for
9 those specific consumers, yes, ma'am, it ranked in that top
10 five at the top.

11 Q. We've seen document after document after document where
12 battery life is at the top of the list. Right, Ms. Roberts?

13 A. I'm not disputing that.

14 Q. It's part of what makes Samsung's brand.

15 A. It's one of the many things that makes Samsung's brand.

09:24 16 Q. And you understand that from our damages presentation
17 that Headwater's position is that consumers are willing to pay
18 more if they have a longer battery life. Correct?

19 A. I saw that from Mr. Dell's presentation, yes, ma'am.

20 Q. And if Samsung can charge more for each of the hundreds
21 of millions of phones that its sold, Samsung makes more money.
22 Right, Mrs. Roberts?

09:24 23 A. I saw that from Mr. Dell's presentation, yes, ma'am.

24 Q. Well, I mean, that's just a fact. If you can charge \$20
25 more for a phone, you make more money. Right, Mrs. Roberts?

1 A. With simple math, yes, ma'am.

2 Q. Samsung benefits from charging a higher price. Correct?

3 A. I'm not sure I really agree with that.

09:25

4 Q. Samsung makes more profits when it can charge a higher
5 price; just in general. You can't agree with that?

6 A. I can't agree with that, no.

7 Q. If there's something that contributes to higher profits,
8 that should be credited. Fair?

9 A. I think that's just a very, very broad question.

10 Q. Samsung does a lot of things to increase its profits.

11 Right, Ms. Roberts?

09:25

12 A. I would say yes.

13 Q. And you want credit for what you've done to increase your
14 profits. Right, Ms. Roberts?

15 A. I think that's fair.

16 Q. Samsung wants credit for its work. Right, Ms. Roberts?

17 A. I think that's fair.

18 Q. You don't fault Dr. Raleigh for wanting credit for his
19 work, do you?

09:26

20 A. I can't speak for Dr. Raleigh, no.

21 MS. FAIR: I'll pass the witness.

22 THE COURT: Is there redirect?

23 MS. SMITH: Yes, Your Honor.

24 THE COURT: All right. Let's proceed with redirect.

25 MS. SMITH: Thank you, Your Honor.

1 If we could see JTX 28, please.

2 REDIRECT EXAMINATION

09:27

3 BY MS. SMITH:

4 Q. Now, Ms. Roberts, you took a look at this document both
5 with me and with Ms. Fair. Correct?

6 A. That is correct.

7 Q. And Ms. Fair asked you about a conversation you had or
8 some work you did with Ms. Paulino about this survey. Did I
9 hear that correctly?

10 A. That is correct.

09:27

11 Q. What did you learn about this survey from Ms. Paulino,
12 the person who conducted it, about why Samsung conducted it?

13 A. When I spoke to Ms. Paulino, it was indicating there was
14 a request for any push notification surveys. We found that we
15 had never conducted -- out of the hundreds of surveys that
16 we've conducted across, you know, many projects, we'd never
17 conducted one on push notifications, so it was a one-off
18 request to gather additional information from consumers on
19 their sentiment of push notifications.

09:27

20 Q. Okay. And you say it was a one-off request. There were
21 no surveys of this nature before. Have there been any after?

22 A. No, ma'am.

23 Q. Okay. Ms. Fair asked you -- and as a result of this
24 survey, again, did Samsung expand its use of push
25 notifications?

1 A. No, we did not.

2 Q. Did your team expand its use of push notifications?

3 A. No, we did not.

09:28

4 MS. SMITH: If we could go to I believe it was page

5 2. Yes.

6 Q. (BY MS. SMITH) Ms. Fair had pointed out in that summary

7 that [REDACTED] of Samsung users, you know, agree that push

8 notifications are important. Do you remember her pointing to

9 that on the screen?

10 A. Yes, ma'am.

11 Q. Who is represented by that [REDACTED]?

09:29

12 A. Those are consumers that are already opting in to
13 receiving at least one push notification on their smartphone.

14 Q. And out of -- so that's the 1500 respondents. Correct?

15 A. That is correct.

16 Q. Who is excluded from the 1500?

17 A. All those other consumers that do not opt-in to push
18 notifications at all.

19 Q. And then how many are actually Samsung owners?

20 A. Within this survey, 505.

09:29

21 Q. So excluding all those people, just so no one's misled,
22 it's 96 percent of 505 people that opt-in to push

23 notifications. Correct?

24 A. That is correct.

25 Q. All right. Ms. Fair asked you some questions about

1 Samsung knowing how to price its products and Samsung knowing
2 what consumers will pay for products. Correct?

3 A. That is correct.

4 Q. She noted that Samsung didn't do a survey for this case.
5 You remember that question?

09:30 6 A. Yes, ma'am.

7 Q. Does Samsung already have numerous studies and surveys to
8 use in considering how to market their phones?

9 A. Yes, ma'am.

10 Q. So why didn't they need to do one for this litigation?

11 A. Because we already had research available.

12 Q. And you know something about how to price phones and what
13 consumers want?

14 A. Yes, ma'am.

09:30 15 Q. All right. We'll talk a little bit about battery life.

16 When you and I spoke, we talked about how there are many,
17 many, many documents at Samsung saying that battery life is
18 important. Correct?

19 A. Yes, ma'am.

20 Q. We actually visited about the fact that Ms. Fair may want
21 to visit with you about some of those. Correct?

22 A. Yes, ma'am.

09:30 23 Q. Is there any dispute in this courtroom that battery life
24 is important?

25 A. No, ma'am.

1 Q. How long has Samsung been delivering an all-day battery
2 life to customers?

3 A. Over a decade.

4 Q. That's before Plaintiff alleges we started using their
5 technology. Fair? If you know.

6 A. I don't recall the exact time frame. I'm sorry.

7 Q. Fair enough.

8 But what you do know is what Samsung's customer
9 expectations are about battery life. Correct?

09:31

10 A. Absolutely.

11 Q. And tell us a little bit about that.

12 A. Consumers expect an all-day battery life, and that's what
13 we've been providing to consumers for well over a decade.

14 Q. Okay. Ms. Fair pointed to a document, I believe it was
15 JX 13. It's from about a decade ago, I believe. Do you
16 recognize that one?

09:31

17 A. Yes, ma'am.

18 Q. What's the date on this document?

19 A. It says January 14th, 2016.

20 Q. And she pointed to a single model. Do you recall that?

21 A. Yes, ma'am.

22 Q. And there were some comparisons between that single model
23 and an iPhone. Correct?

24 A. That is correct.

25 Q. Fair to say that's the exception to the norm? We weren't

09:32

1 having problems across all your models. Fair?

2 A. That is correct.

3 Q. That was an isolated incident with a single model.

4 Correct?

5 A. That is correct.

6 Q. Were other models at the time performing as expected?

7 A. Yes, ma'am.

8 Q. And we didn't hear a peep from Ms. Fair about all the
9 many, many other models that were performing perfectly well
10 and as expected with all-day battery life, did we?

11 A. That is correct.

12 Q. Okay. Ms. Fair tried to do some simple math with you,
13 and she said an increase in price means increased profits.

09:33

14 Right. Do you remember that?

15 A. That is correct.

16 Q. If Samsung raises its prices, might they sell fewer
17 phones?

18 A. That is quite possible, yes, ma'am.

19 Q. All right. Now, one more question about these surveys.

20 Based on your 20 years of experience in the industry, and
21 understanding consumer preferences through hundreds of Samsung
22 surveys, do you think Samsung needed to conduct a survey to
23 determine whether consumers would pay for 2 to 7 percent of
24 battery life?

09:33

25 A. No, ma'am.

1 Q. Why not?

2 A. That kind of increase is really not going to move the
3 needle for a consumer.

4 Q. Well, when Samsung has occasion to take a look at and
5 survey folks about what does move the needle for consumers,
09:33 6 what type of increments are they using in increased battery
7 life?

8 A. We'd be looking at doubling or tripling kind of the
9 battery life for those consumers.

10 Q. And remind us, what are we looking at in the newest,
11 latest, greatest Samsung phones as far as battery life right
12 now?

13 A. Well into three days.

14 Q. Thank you so much, Mrs. Roberts.

15 MS. SMITH: Your Honor, I'll pass the witness.

16 THE COURT: All right. Is there further cross
17 examination?

18 MS. FAIR: Yes, Your Honor.

19 THE COURT: All right. Proceed with additional
20 cross.

21 RE-CROSS EXAMINATION

09:34 22 BY MS. FAIR:

23 Q. Ms. Roberts --

24 MS. FAIR: Mr. Mahon, can we please have JX 28 at
25 page 2?

1 Q. (BY MS. FAIR) Sounded like you were suggesting that this
2 was a survey that was pretty limited because it was only
3 people who opted in to push notifications. Is that fair?

09:34

4 A. As it's stated in here for those respondents, they must
5 receive push notifications on at least one app on their
6 smartphone to be included.

7 Q. And just to be clear, what we're talking about here is
8 not some extra thing that you have to opt into; we're talking
9 about a consumer has to for just one app on their smartphone
10 get a push notification. Correct, Ms. Roberts?

11 A. That is correct.

12 Q. That's not some small set of consumers, is it,
13 Ms. Roberts?

09:35

14 A. I'm not sure I understand your question.

15 Q. You're not going to deny that most people get push
16 notifications for at least one app on their phone, are you?

17 A. I can't confirm that the number of consumers that don't
18 opt in. I know we have research and feedback that not all
19 consumers like push notifications.

09:35

20 Q. People have dozens of phones on their app. Right, Ms.
21 Roberts? Dozens of apps on their phone. Excuse me.

22 A. It's quite possible, yes.

23 Q. And that can include email. Correct?

24 A. That is one, yes.

25 Q. Facebook?

1 A. It could.

2 Q. A news app?

3 A. It could.

4 Q. Maybe your banking app?

5 A. It could.

6 Q. You get push notifications on your phone?

7 A. Do I? Yes, ma'am.

8 Q. For at least one app? I do.

9 A. Yes, ma'am.

09:36 10 Q. And at the end of this study --

11 MS. FAIR: If we could go to JX 29, Mr. Mahon.

12 Q. (BY MS. FAIR) -- we see a [REDACTED] opt-in rate for
13 Samsung messages. Correct?

14 A. That is correct.

15 MS. FAIR: Thank you, Mr. Mahon.

09:37 16 Q. (BY MS. FAIR) You understand that in this case the
17 battery increase that Headwater is asserting is 2 to 4
18 percent. Right, Mrs. Roberts?

19 A. I understand that's what Headwater is asserting, yes,
20 ma'am.

21 Q. And you understand that Headwater is asserting that it is
22 entitled to \$5 per phone for that 2 to 4 percent increase.
23 Correct?

24 A. I understand that's what they're asserting, yes, ma'am.

09:37 25 Q. They're not asserting that phone prices -- they're not

1 asserting that battery life is going to magically be days
2 long. Correct?

3 A. Not based on their report, no, ma'am.

4 Q. It's a 2 to 4 percent increase. Right?

5 A. That is what their report said.

6 MS. FAIR: And if we go to JX 13, Mr. Mahon, this
7 2016 document. And if we go to page 8 again.

09:37 8 Q. (BY MS. FAIR) This -- we talked about the Galaxy S6
9 lagging -- being behind by quite a bit. It had quite a few
10 problems with battery. Correct?

11 A. This is highlighting that it has an issue with battery
12 life compared to competition, yes, ma'am.

13 Q. But even your highest performing phone, the Galaxy S5,
14 was only a couple of hours behind Apple and it lagged behind.
09:38 15 That was notable at Samsung. Correct?

16 A. That's what the survey says, yes, ma'am.

17 MS. FAIR: I'll pass the witness.

18 THE COURT: All right. Further direct examination?

19 MS. SMITH: Very briefly.

20 REDIRECT EXAMINATION

21 BY MS. SMITH:

22 Q. Ms. Roberts, we took another look at that survey, JX 28,
23 and just to be absolutely certain, I mean, Ms. Fair asked you
24 about how many people may be opting out or opting in, and that
09:38 25 being a potentially larger set of survey respondents.

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1 MS. SMITH: If we could see JX 28 at 2.

2 Q. (BY MS. SMITH) We know with absolute certainty how many
3 Samsung survey respondents were in this survey. Correct?

4 A. That is correct.

5 Q. And what do we see there?

6 A. There is 505 Samsung owners.

7 Q. So when we go back to that page again, that conclusion,
09:39 8 and we look at [REDACTED] and it says [REDACTED] of all
9 Samsung owners, what does that mean?

10 A. That's [REDACTED] of those 505 Samsung owners subscribe
11 to the OEM push notification.

12 Q. And when we talk about a Samsung phone lagging behind an
13 Apple phone, are they -- unfortunately is Apple delivering
09:39 14 all-day battery life right now as well?

15 A. It depends on the specific phone.

16 Q. You guys are neck-and-neck typically, though?

17 A. I would say typically, yes.

18 Q. All right. Thank you, ma'am. Ms. Roberts?

19 MS. SMITH: Ms. Roberts, I pass the witness.

20 Q. (BY MS. SMITH) Thank you, Ms. Roberts.

21 MS. SMITH: Your Honor, I pass the witness.

22 THE COURT: Any additional cross?

23 MS. FAIR: No, Your Honor.

24 THE COURT: All right. You may step down,
25 Ms. Roberts. If you will, return to the counsel table.

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09:40 1 Ladies and gentlemen, we're going to take a short recess
2 at this point. If you'll simply close your notebooks and
3 leave them in your chairs, don't discuss the case among
4 yourselves, follow all my other instructions, and we'll be
5 back shortly to continue with the next defense witness.

6 The jury's excused for recess.

09:41 7 (Whereupon, the jury left the courtroom.)

8 THE COURT: Let me see lead, local, and one other
9 lawyer from each side in chambers, please.

10 The Court stands in recess.

11 (Brief recess.)

12 THE COURT: Be seated, please.

10:06 13 Mr. Yang, are you prepared to go forward with your
14 witness?

15 MR. YANG: Yes, Your Honor. Thank you.

16 THE COURT: All right. Let's bring in the jury,
17 please.

18 (Whereupon, the jury entered the courtroom.)

10:07 19 THE COURT: Please be seated, ladies and gentlemen.
20 Defendants, call your next witness.

21 MR. YANG: Lance Yang for Samsung, and Samsung now
22 calls Mr. Todd Hansen to the stand.

23 THE COURT: Mr. Hansen, if you'll come forward and
24 be sworn, please.

25 (Whereupon, the oath was administered by the Clerk.)

10:07 1 THE COURT: Please have a seat on the witness stand.

2 Ladies and gentlemen, before counsel begins with his
3 questions, the parties have agreed that I should remind you
10:07 4 that Mr. Hansen is a Google employee and that Google has a
5 financial interest in this case through its relationship with
6 Samsung.

7 All right, Mr. Yang. You may proceed with direct
8 examination.

9 MR. YANG: Thank you, Your Honor.

10 TODD HANSEN,

11 having been first duly sworn, testified under oath as follows:

12 DIRECT EXAMINATION

13 BY MR. YANG:

14 Q. Good morning, Mr. Hansen. Can you please introduce
15 yourself to the jury?

16 A. Yes. Hi. I'm Todd Hansen. I live in Los Gatos,
17 California, with my wife and kids.

18 Q. Mr. Hansen, you may want to lean a little closer to that
19 microphone so we can all hear you.

20 A. Okay. Sorry about that.

10:08 21 Q. Where do you work, Mr. Hansen?

22 A. I work at Google.

23 Q. How long have you been at Google?

24 A. I've been at Google for about 18 years.

25 Q. Today what are your responsibilities at Google?

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1 A. I lead the Firebase Cloud Messaging team as well as two
2 other products at Firebase.

3 Q. Do you work on computer systems at Google?

4 A. Yes.

5 Q. And when did you first get into working on computers?

10:08

6 A. In fourth grade my teacher, Mr. Diaz, ran an afterschool
7 program to learn computer programming. My friends and I
8 participated in that and really enjoyed it. Then in high
9 school, they offered a technical program that involved
10 computer programming and electrical engineering that I
11 participated in.

12 Q. And did you continue studying computer systems in
13 college?

10:09

14 A. Yes. I went to UC San Diego, and I earned a Bachelor's
15 in computer science. And then I stayed on and worked at the
16 San Diego Super Computer Center and Scripps Institution of
17 Oceanography built-in sensor networks.

18 THE COURT: Mr. Hansen, you're going to need to slow
19 down.

20 THE WITNESS: Thank you.

21 THE COURT: I want the jury to follow your
22 testimony, but you are talking way too fast. Please try to
23 just slow down. Take a deep breath. Okay?

24 THE WITNESS: Okay.

25 THE COURT: All right, counsel.

1 MR. YANG: Thank you, Your Honor.

2 Q. (BY MR. YANG) Now, how long have you been working on
3 Google's cloud messaging system called FCM?

4 A. Since I joined Google in 2007.

10:09 5 Q. So have you worked on every generation of FCM over those
6 years?

7 A. Yes.

8 Q. Now, what was your next position at Google after you were
9 a site reliability engineer?

10 A. I was a site reliability manager. I was managing a team
11 of site reliability engineers.

12 Q. And when did you become the lead of the FCM engineering
13 team at Google?

14 A. In 2018 I became the lead.

10:10 15 Q. Now, as part of your work as an engineer on FCM, do you
16 speak with engineers at other companies?

17 A. Yes. From time to time companies have questions about
18 how our product works or want clarification on certain things.

19 Q. Who are some of those companies?

20 A. Companies like Samsung or Motorola.

21 Q. Now, prior to this litigation, other than your
22 discussions with these Samsung engineers, had you ever worked
23 or done any work for Samsung?

24 A. No.

10:11 25 Q. Why are you here today, Mr. Hansen?

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1 A. I'm here because Samsung uses Firebase Cloud Messaging in
2 their products, and as the lead for Firebase Cloud Messaging I
3 want to stand behind my product.

4 Q. Now, prior to this case, had you ever heard of Headwater,
5 Dr. Raleigh, or his patents?

6 A. No.

7 Q. Now, in this case did Google provide the same
10:11 8 documentation and source code to both Headwater and Samsung?

9 A. Yes.

10 Q. Now, the source code that Google produced, is that JX 72
11 in that -- those two red folders in front of you?

12 A. Yes.

13 Q. Mr. Hansen, what is Android?

14 A. Android is an operating system for mobile devices that
15 allows you to run apps on those devices.

16 Q. What does FCM provide to the Android ecosystem?

10:11 17 A. FCM provides the push messaging framework that allows app
18 developers to send messages to their apps which can then be
19 used for entering notifications or doing in-app operations.

20 THE COURT: You're still going to need to slow down,
21 Mr. Hansen.

22 THE WITNESS: Thank you.

23 THE COURT: Please make an effort.

24 THE WITNESS: I will.

25 THE COURT: Go ahead, counsel.

1 Q. (BY MR. YANG) Has FCM had other names over the years?

2 A. Yes. In 2008 it was called GtalkService. In 2010 it was
10:12 3 called CDDM. In 2012 it was called GCM. And then finally in
4 2016 we called it Firebase Cloud Messaging, or FCM.

5 Q. Does Google commonly rename or rebrand its products over
6 the years?

7 A. Google has a tendency to rebrand its products. We, for
8 example, have the dual app which is a video chat app that was
9 rebranded as Google Meet or the Android Marketplace where you
10 would download apps for your phone was rebranded as Play Star.

10:13 11 Q. So what is the term FCM mean for you inside Google?

12 A. So for me when I refer to FCM, I'm referring to all
13 versions of FCM, all the way back to GtalkService to the
14 current day Firebase Cloud Messaging.

15 Q. Could you please slow down just a little bit, Mr. Hansen.

16 A. Yes.

17 Q. Now, has the process of sending push messages through FCM
10:13 18 changed over the years since the first generation of
19 GtalkService?

20 A. We've added features and functionality over the years,
21 but the core architecture has stayed the same.

22 Q. So by core architecture, what do you mean?

23 A. Yeah. There's two components to it. First, the divided
24 server network. That's where we have servers that are
25 specifically to receive messages from the app servers and

1 servers that are specifically there to connect with the
10:13 2 devices. And the second part is the persistent aggregated
3 connection that allows us to send multiple apps data over the
4 single connection.

5 Q. So starting at 2008, that aggregated push messaging
6 channel, multiple apps could send push messages over that same
7 channel. Is that correct?

8 A. Correct.

9 Q. Now, when push messages arrive at the phone, how does the
10:14 10 phone know which app to route a particular message to?

11 A. So there is information in the message that tells us
12 which app to deliver that message to.

13 Q. And has that been true since 2008?

14 A. Yes.

15 Q. Has FCM been a secure push messaging system since 2008?

16 A. Yes. For example, we use SSL encryption on the
17 connection from the mobile connection server to the device.

18 Q. I'd like to ask you some questions about this first
10:14 19 generation of FCM called GtalkService. Now, what was the
20 first Android phone that used GtalkService?

21 A. That was the T-Mobile G1.

22 Q. Now, I understand you brought your T-Mobile G1 here
23 today. Do you mind showing the jury that T-Mobile G1?

24 A. Yes. So nice little...

25 Q. Why is it you still have your phone from that many years

1 ago?

10:15 2 A. This was a special phone to me because it changed what we
3 could do with mobile devices. Previously, like with my Palm
4 Pilot, I had to sync it periodically by connecting into a
5 stand or so forth.

6 This device was always in sync; it was always up-to-date.
7 I could receive chat messages from loved ones right away. And
8 it was a whole new connected experience, and a large portion
9 of that was thanks to the way that FCM allowed the messages to
10 be pushed to the device.

11 Q. Now, do you remember anything particular about that
12 initial release of the T-Mobile G1?

10:15 13 A. Yeah. I remember the day after, when my boss called me
14 over and showed me a graph of users starting to use the
15 GtalkService after buying the G1.

16 Q. So when was the G1 first released?

17 A. September 2008.

18 Q. What were the apps that use the GtalkService on this
19 T-Mobile G1 back in 2008?

10:16 20 A. That would have been the Google Talk/Chat app that would
21 have been the Gmail app, the Calendar app, and the contacts
22 app.

23 Q. Okay. So on the T-Mobile G1 when the Gmail app sent
24 messages to the phone, would those push messages go to the
25 Gmail app?

1 A. Yes.

2 Q. Would those push messages go to the other three apps that
3 were on the phone?

4 A. To clarify, you're saying with the Gmail push messages go
5 to the other apps like contacts app?

6 Q. Yeah.

7 A. No.

8 Q. Okay. And that would have been true for the other three
10:16 9 apps as well. Right? So each app would get the message it
10 was supposed to get. Is that right?

11 A. Correct.

12 Q. And all those apps communicated over a single push
13 messaging channel. Is that correct?

14 A. Correct.

15 Q. Now, if someone were to refer to the GtalkService as a
16 public bulletin board, would you think that that was a correct
17 analogy?

10:17 18 A. No, I wouldn't. I use this phone constantly in talking
19 with my wife. I would not be comfortable talking with my wife
20 on a public messaging board.

21 Q. All right. So GtalkService, that's a pretty unique name.
22 Where did that name come from?

23 A. Sure. So in 2005 Google created a push messaging service
24 for desktops to allow the Google Talk/chat experience to work.
10:17 25 That experience we then extended to work for Android devices.

1 And as a result of that extension, we created the
2 GtalkService.

3 Keep in mind, there weren't that many engineers on the
4 project. There were five or seven engineers at the time and
5 so we couldn't just build from scratch; we had to use what
6 existing technology existed.

7 Q. Just to be clear, the version of the push messaging
8 system for desktop computers, was that 2005?

9 A. That's when we started it, yeah.

10:18

10 Q. Okay. I'd like to move on to talk a little bit about the
11 actual infrastructure for the GtalkService. Now, in that
12 divided server architecture, what were the servers called that
13 communicated with the app servers?

14 A. Those were the session servers, and they were responsible
15 for making sure that they would receive the messages from the
16 apps, storing those messages, and making sure they were
17 eventually delivered.

10:18

18 Q. And what were the name of the servers that were dedicated
19 to talking with the Android devices or the phones at the time?

20 A. Those were the mobile connection servers, and they were
21 responsible for maintaining the connection with the device and
22 forwarding the messages that they received.

23 Q. Now, how does the software on the session servers compare
24 with the software on the mobile connection servers?

25 A. They're completely different.

1 Q. So did the app servers talk to the mobile connection
2 servers?

3 A. No.

4 Q. Did the session servers talk to the Android devices?

5 A. No.

10:19 6 Q. Now, today in FCM, how many mobile connection servers
7 approximately are out there?

8 A. About 5,000.

9 Q. What about the session servers?

10 A. About 4,000.

11 Q. Okay. So of those approximately 9,000 servers, is there
12 any single server that communicates with both the app server
13 and an Android device?

14 A. No.

10:19 15 Q. Why did you use a divided server architecture?

16 A. There were two reasons that we did that. The first is
17 location. It's really important that these servers be close
18 to where they're connected to where they're working with. So,
19 for example, the session servers had to be close to where the
20 app servers were sending traffic. Similarly, the mobile
21 connection servers had to be close to where the users were
22 connecting their devices.

10:20 23 The second reason was scalability. We would never have
24 been able to scale from under a million devices to billions of
25 devices without a divided server architecture. For example,

1 we could scale up the session servers to match app server
2 needs independently of the mobile connection servers which we
3 could scale up to meet device needs.

4 Q. Now, what would your response be to someone who said the
5 FCM mobile connection servers and the FCM session servers are
6 really just one server?

10:20 7 A. They are -- they have -- both servers have separate
8 responsibilities and they run separate code.

9 Q. So would it be correct to call them one server?

10 A. No.

11 Q. Now, what kind of link did the Gtalk servers use to
12 communicate with these four apps on the T-Mobile G1?

13 A. So we used a standard TCP connection.

14 Q. Okay.

15 MR. YANG: Now, Mr. Andryszak, would you mind
16 pulling up JX 51, please?

10:21 17 Q. (BY MR. YANG) Now, this is a document titled A Brief
18 History of FCM. Who is Mr. Fred Quintana?

19 A. Mr. Quintana is an engineer on my team. I've known him
20 since about 2009.

21 Q. What is the date of this document?

22 A. December 2021.

23 Q. And when did you first get this document?

24 A. I first got to see this document when Fred -- when Mr.
25 Quintana was presenting it to our team to help train them on

10:22 1 the history of FCM. Many of the team members were newer to
2 the team and hadn't experienced this, and so they need to know
3 why some things were the way they were.

4 Q. Is this an internal Google document?

5 A. Yes.

6 Q. Was this document created for this litigation?

7 A. No. It predates it.

8 Q. And was this document provided to both Headwater and
9 Samsung in this case?

10 A. Yes.

10:22 11 Q. Okay. Now, what does this brief history of FCM say about
12 the different generations of FCM over the years?

13 A. So this talks about the various generation of FCM and
14 what changed in those times, and it -- yeah.

15 Q. Does this document provide a timeline of those different
16 generations of FCM?

17 A. Yes.

18 Q. Okay. Now, what does this document say about those core
19 features that you talked about just now?

10:22 20 A. It demonstrates that they existed in the Google Talk
21 service era.

22 Q. All the way to today?

23 A. Yeah.

24 Q. Okay. Now, I'd like to direct your attention to the
25 section titled 2008 Beginning of MCS Development. Do you see

1 that?

2 A. Yes.

3 Q. Now, in this section about 2008, do you see references to
4 those divided server architecture and that aggregated
5 persistent push messaging channel?

10:23 6 A. Yeah. It talks about session servers and connection
7 servers, and it talks about the persistent connection.

8 Q. Now, in GtalkService, was the -- was it the Android
9 device or the mobile connection server that established the
10 push messaging link?

11 A. It was the Android device.

12 Q. I'd like to take your attention to --

13 MR. YANG: Oh. Thank you, Mr. Andryszak.

14 Q. (BY MR. YANG) -- another section in this 2008 that's
10:23 15 talking about a few chat messages, and that's probably -- oh,
16 here we go. That's right.

17 Now, do you see reference here to the four apps that you
18 mentioned were on the T-Mobile G1?

19 A. Yes. Gchat was the talk app or the chat app. Gmail
20 Contacts and Calendar are listed there, too.

21 Q. Now, going a little further up again in that same 2008
22 section, there's a section about something called an RMQ.
23 Now, what is an RMQ?

10:24 24 A. That's is the reliable message queue. That's where we
25 would store the messages to ensure they could be delivered

1 when the device was offline.

2 Q. Does that still exist in FCM today?

3 A. Yes.

4 Q. There's a reference here that says concept of RMQ
5 developed mainly by Debajit Ghosh. Who is Mr. Ghosh?

6 A. Mr. Ghosh was an original engineer on the Firebase Cloud
7 Messaging team. He and I worked together to scale our mobile
10:24 8 connection server up as the service grew.

9 Q. Now, we can go to the section titled 2008 Launch of
10 Android.

11 MR. YANG: Thank you.

12 Q. (BY MR. YANG) Now, is this referring to the launch of
13 Android in the G1?

14 A. Yes, this is when we launched with the T-Mobile G1.

10:25 15 Q. Now, that second bullet refers to all Google code,
16 including the RMQ client code, was distributed to cell phone
17 manufacturers when they created an Android device. Do you see
18 that?

19 A. Yes.

20 Q. What's that referring to?

21 A. So in order for cell phone makers to include Firebase
22 Cloud Messaging and other components, they had to install
23 software on their side so we provided them with that software.

10:25 24 MR. YANG: Oh, Mr. Andryszak, we can take this down.
25 Thank you.

1 Q. (BY MR. YANG) All right. So in GtalkService, what was
2 that -- what was the name of that piece of information in the
3 push messaging app that identified which app was supposed to
4 get that push message?

5 A. That was action name.

10:26 6 Q. Now, for each application, who got to select the name
7 they used for that action name?

8 A. The app developer got to select that.

9 Q. Are you familiar with something called a package name in
10 Android?

11 A. Yes. That defines the -- or that's how we define what an
12 app -- or what -- that identify -- sorry. Yes, that
13 identifies the app.

14 Q. It's okay, Mr. Hansen.

10:26 15 Now, did package names exist in 2008?

16 A. Yes.

17 Q. And in GtalkService, could app developers use the package
18 name inside the action name to help route the message to the
19 right app?

20 A. Yes. As a matter of fact, that's what we recommended
21 they use for the action name.

22 Q. Okay. Now, did Google provide the code for GtalkService
23 and how to use action name to both Headwater and Samsung in
24 this case?

25 A. Yes.

10:27 1 Q. Now, leading up to the launch of the T-Mobile G1 and
2 GtalkService, did Google keep GtalkService a secret?

3 A. No. We needed people to develop apps for the phone and
4 the phone didn't exist yet, so we started communicating about
5 how to develop apps before it came out.

10:27 6 MR. YANG: Can we put up JX 9.158?

7 Q. (BY MR. YANG) Now, Mr. Hansen, this is a webpage from
8 developer.android.com. What is that website?

9 A. This is a place where we include information for
10 developers about building on Android.

11 Q. Okay. Now, this particular page are the SDK archives.
12 What are SDKs?

10:28 13 A. SDKs are software development kits. It's a list of tools
14 and documentation to help you build apps.

15 Q. I'd like to show you the tools that Google provided to
16 Android developers back in March 2008.

17 MR. YANG: Can we go to page 161, please? There you
18 go, 161 and 162.

19 Q. (BY MR. YANG) All right. What are we seeing here, Mr.
20 Hansen?

10:28 21 A. This is the release we made of tools and documentation
22 and a demo app for the -- for people to be able to use to
23 develop their apps for Android, including using GtalkService.

24 Q. What was the name of the demo app that Google provided to
25 developers to use GtalkService?

1 A. API Demos.

10:29 2 Q. Is the source code for that demo app, API Demos, in JX
3 72, that code that's in front of you?

4 A. Yes.

5 MR. YANG: All right. Can we put up JX 9, page 128?

10:29 6 Q. (BY MR. YANG) Now, this is a website from 2008 for
7 code.google.com. Now, what is code.google.com?

8 A. Code.goggle.com was a place where Google would make code
9 available as well as some documentation for external
10 developers.

11 Q. Okay. So let's see what this page looked like for
12 developers in 2008 and, in particular, the second-to-last
13 paragraph.

14 MR. YANG: Can we blow that up a little bit?

10:30 15 Q. (BY MR. YANG) Okay. Do you see here a reference to a
16 Google Talk service here?

17 A. Yes.

18 Q. Now, in that last sentence of that paragraph on the top
19 there, it says, Google service maintains a persistent socket
20 connection. And then it goes on to say, The system currently
21 maintains a single Gtalk connection to the server and all
22 message traffic is carried on that same connection. Do you
23 see that?

10:30 24 A. Yes. That's talking about our persistent aggregated
25 connection.

1 Q. Thank you.

2 MR. YANG: We can take that down. Thank you.

3 Q. (BY MR. YANG) So when the T-Mobile G1 first released in
4 2008, were there any non-Google apps that used GtalkService?

5 A. No, there weren't.

6 Q. Why was that?

7 A. We hadn't solved how to validate third party -- or to
10:31 8 validate non-Google senders to ensure that they could deliver
9 to their apps because we wanted to make sure that the only
10 messages that the apps could receive was from the app owner,
11 not from random people on the internet.

12 Q. Okay. Now, how did you end up validating non-Google
13 senders?

14 A. We ended up using the app owners Gmail account to
15 validate that the senders get their messages, and that
10:32 16 released with C2DM in 2010.

17 Q. Now, when Google made this decision to keep GtalkService
18 secure to only Google apps, did Google let developers know
19 that this was happening?

20 A. Yes.

21 Q. And did Google let developers know that Google would
22 continue to use GtalkService for its own apps?

23 A. Yes.

24 Q. Are you familiar with a website
10:32 25 androiddevelopers.googleblog.com?

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1 A. Yes.

2 Q. And does this website keep records of the release notes
3 that Google does for its software tools that it makes
4 available to app designers?

5 A. Yes.

6 Q. Okay.

7 MR. YANG: Can we show DDX 268.1?

8 Q. (BY MR. YANG) All right. So I'm going to look at the
9 release notes for Android .9. And this is the version that
10 came out just before the September 2008 one.

10:32 11 MR. YANG: Now, if we go down to -- actually flip to
12 page three, so 268-3. Toward the middle there, there is a
13 paragraph that begins, due to security risks. There we go.
14 Thank you.

15 Q. (BY MR. YANG) Now, it says here on this release note
16 that there was security risks inherent to accepting arbitrary
17 data from outside the device. Do you see that?

18 A. Yes.

19 Q. Okay. Now, what's that referring to?

10:33 20 A. That's referring to the challenge of how do we validate
21 the senders of these push messages that I referred to earlier.

22 Q. Okay. And the fix for that was being able to verify who
23 they were. Is that right?

24 A. Right, being able to verify the senders.

25 Q. Okay. And that fix that we're talking about being able

1 to verify the senders, was that inside the Android device or
2 outside the Android device?

3 A. That was on the server side.

4 Q. So outside the Android device.

5 A. Yeah.

10:33 6 Q. Okay. Now, you'll also see here in the next two
7 sentences, it talks about the GtalkService will provide
8 connectivity to Google servers. This will be a
9 Google-specific service. Do you see that?

10 A. Yes.

11 Q. Okay. And what's that referring to?

12 A. That's referring to the fact that we would continue to
13 use GtalkService for the four apps that I mentioned earlier
14 when the G1 released even if we couldn't offer it to third
15 parties or non-Google developers.

10:34 16 Q. Okay.

17 MR. YANG: We can take this down.

18 Q. (BY MR. YANG) Now I'd just like to briefly run through
19 and trace how these core features in the architecture made
20 their way into FCM today.

21 MR. YANG: Now if we could pull up JX 51, please.
22 It disappeared from my screen. Okay. So it's not me then.

10:34 23 Hold on a second. You were on the right one before. 52. Oh,
24 did I say 51? I'm sorry. I meant 52.

25 Q. (BY MR. YANG) Okay. This document titled FCM on

1 Android, who is the author of this document?

2 A. Mr. Byrne.

3 Q. And who is Mr. Byrne?

4 A. He was an engineer on our team.

5 Q. What was the purpose of this document?

10:35

6 A. This document was intended to train FCM engineers on how
7 to develop within our Android feature set.

8 Q. This is an internal Google document as well?

9 A. Yes.

10 Q. Was it made for this litigation?

11 A. No. It predates that.

12 Q. And this document was also provided to both Headwater and
13 Samsung. Is that right?

14 A. Yes.

15 Q. Okay.

16 MR. YANG: Can we pull up 52, page 9, please?

17 Q. (BY MR. YANG) Okay. Now, this slide called MCS
18 Connection, is this a diagram -- a rough diagram of FCM?

10:35

19 A. Yes.

20 Q. Okay. Now, that cloud shape at the top there, external
21 servers, what's that?

22 A. Those would be the app servers owned by the app owners
23 that would send us the messages to deliver to the apps.

24 Q. Where are the Android devices in this figure?

25 A. The Android devices are in the box labeled Android.

10:36 1 Q. Okay. Now, the session servers we talked about in
2 GtalkService, where are they in this figure?

3 A. They're called data messaging backend send now. Yeah.
4 They connect to the external servers.

5 Q. Okay. Now, I see two DMBE clouds there. One's called
6 send; one's called register. Why is that DMBE called send?

7 A. That's called send because that's the server that the app
8 developers would connect to to send data messages.

10:36 9 Q. Okay. Now, where is that MCS server we saw or we talked
10 about that was first started in GtalkService?

11 A. Yeah. The MSC server or mobile connection server is
12 connected to the Android devices directly above it.

13 Q. Okay. Now, do you see the persistent connection
14 referenced here from GtalkService?

15 A. Yeah. In the left two bullets, it talks about that.

16 Q. What kind of messages or what kind of data can be sent
17 over that persistent connection?

10:37 18 A. So we didn't specify anything. So it could be
19 notifications, it could be things that trigger your app to
20 call home and sync data, it could be data that your app needs.

21 Q. Okay. That was also true for GtalkService as well?

22 A. Yes.

23 Q. Is there a size limit to how much data you can send over
24 this channel per message?

25 A. We have a limit of 4 kilobytes per message.

1 Q. What is the connection protocol that this connection
2 uses?

3 A. This connection operates over standard TCP.

10:38 4 Q. So does this persistent connection just use the regular
5 internet to send messages?

6 A. Yes.

7 Q. Now, how long has Google been using the standard internet
8 connection for this persistent connection?

9 A. From the very beginning to today.

10 Q. Okay. Now, there's a reference here to -- in the center
10:38 11 of the screen here that says custom TCP protocol. What is
12 that custom referring to?

13 A. That refers to the protocol of the data that we send
14 within the TCP connection. So it's like speaking a language,
15 French or English. We need to be sure that the mobile
16 connection server and the Android server -- Android device
17 understand each other.

18 Q. So just to be clear, does Google use a customized version
19 of TCP?

20 A. No. We use the standard one that was invented in 1970s.

10:38 21 Q. Now, what's the security used to protect this persistent
22 connection?

23 A. We use SSL encryption. More recently that's been called
24 TLS encryption. It was invented in the 1990s.

25 Q. Okay. Is that the same encryption SSL that you were

1 using with GtalkService?

2 A. Yes.

3 THE COURT: Mr. Yang, I'm going to ask you to slow
4 down now. Okay?

5 MR. YANG: I'm sorry, Your Honor. I got excited.

6 THE COURT: I don't need to know whether you're
7 excited or not. I just need you to slow down.

8 MR. YANG: Thank you, Your Honor.

9 THE COURT: Ask the next question.

10:39 10 MR. YANG: Thank you, Your Honor.

11 Q. (BY MR. YANG) Now, today does FCM still have an
12 identifier that's used to deliver messages to the app they're
13 supposed to go to?

14 A. Yes.

15 Q. What's that identifier called?

16 A. Package name.

17 Q. Okay. Just like GtalkService?

18 A. Yeah.

19 Q. Okay.

20 MR. YANG: Now, can we put up Headwater's opening
21 slide 39 onto the screen, please?

10:40 22 Q. (BY MR. YANG) Okay. Now, Mr. Hansen, this slide was
23 used in this litigation and it supposedly shows how
24 GtalkService works on the left-hand side and how Android and
25 FCM work on the right-hand side. Do you see that?

1 A. Yes.

2 Q. Okay. I want to ask you a few questions about this
3 diagram to see if this diagram is accurate.

10:40

4 Now, you see on the right-hand side where it says, FCM
5 uses a package name for the app ID?

6 A. Yes.

7 Q. Is that correct?

8 A. Yes.

9 Q. Now, on the left-hand side for the Google Talk Service,
10 this slide says no app ID. Is that correct?

10:40

11 A. No, because we wouldn't have been able to deliver the
12 messages to the apps then. We always needed an app ID.

13 Q. Now, the app ID in GtalkService, remind us what it was
14 called again?

15 A. Action name.

16 Q. And could you use the package name as the action name?

17 A. Yes. And we recommended that in our documentation.

18 Q. Now, staying on the GtalkService side of this slide,
19 right above that it says, implicit intent not secure. Do you
20 see that?

21 A. Yes.

10:41

22 Q. Now, is it true that implicit intents were not secure in
23 the GtalkService?

24 A. No. We were using them, and we knew how to use them
25 correctly.

1 Q. When you say we, who do you mean?

2 A. Google apps, the four Google apps I have mentioned
3 before.

4 Q. Okay. So just to be clear, during GtalkService, only
5 Google was using GtalkService for its own apps. Correct?

6 A. Yeah.

7 Q. And Google knew how to use implicit intents securely.
8 Correct?

10:42 9 A. Correct.

10 Q. The bottom of this screen, there is September 2008.

11 There is language that says, Google removed Gtalk
12 functionality from Android 1.0 due to a security
13 vulnerability. Do you see that?

14 A. Yes, I see that.

15 Q. Is that accurate?

10:42 16 A. No, that's not accurate. We kept Google Talk or
17 GtalkService for our Google apps, and it was used continuously
18 from when we launched the G1.

19 Q. Okay. Now, I think this refers to that security fix
20 relating to validating senders that you testified about
21 earlier. Okay?

22 Now, did the security fix that Google came up with to
23 validate senders, did that fix have anything to do with that
10:42 24 setPackage you see here on the right side of this screen?

25 A. No. As a matter of fact, we opened up to non-Google

1 senders with CDDM in 2010 over a year before setPackage was
2 added to Android.

3 Q. Just to be clear I want to make sure I understand this.
4 So when Google opened up GtalkService to non-Google apps, did
5 setPackage exist?

6 A. No, it did not.

10:43 7 Q. Now, how many devices use FCM today?

8 A. Billions of devices.

9 Q. How many apps were using -- have used GtalkService over
10 the years?

11 A. From the beginning to today, it's millions of apps.

12 Q. And then how many -- in 2008 how many apps were using or
13 phones were using GtalkService?

14 A. It will be under a million in 2008 at the beginning, but
10:43 15 then it grew.

16 Q. Sure. Now, so just to be -- just so I understand,
17 starting with the core architecture you developed, you and
18 your team developed in 2008, GtalkService has grown from under
19 a million users to over a billion Android devices. Is that
20 correct?

21 A. Yes.

22 Q. Okay. And are you proud of the work you and your team
23 have done over these last 18 years?

24 A. Yeah. We've had some really big challenges in terms of
10:44 25 scaling the service and ensuring that it was as reliable as

1 possible. I'm really proud of my team's work here.

2 Q. Thank you, Mr. Hansen.

3 MR. YANG: Your Honor, I pass the witness.

4 THE COURT: All right. Cross examination by the
5 Plaintiff.

6 MR. MIRZAIE: Thank you, Your Honor. May we
7 approach to pass out binders and also move the easel?

8 THE COURT: You may pass out binders.

9 MR. MIRZAIE: Thank you.

10:45 10 THE COURT: Tell me where you'd like to move the
11 easel, Mr. Mirzaie.

12 MR. MIRZAIE: Yes, Your Honor. Let me move it now.
13 Would that be okay?

14 THE COURT: It's typically moved a little further so
10:45 15 that the jury can have a better view of it. Right in there.
16 That's good. Are you going to write on the pad or put
17 boards --

18 MR. MIRZAIE: I was going to put boards up.

19 THE COURT: Okay.

20 MR. MIRZAIE: Thank you.

10:46 21 THE COURT: You'll have to walk around the podium to
22 get to them, but that's all right.

23 Mr. Yang, you're waving your hand at me.

24 MR. YANG: Sorry, Your Honor. Can I inspect those
25 boards?

1 THE COURT: They're his demonstratives. You can
2 certainly position yourself where you can see them, but they
3 should have been reviewed in advance.

4 MR. MIRZAIE: These are the cross examination
5 demonstratives.

10:46

6 THE COURT: I see.

7 MR. MIRZAIE: And also just for everyone's
8 convenience, when I show a board, it will be on everyone's
9 screen, including Mr. Yang's screen, at the same time, the
10 same --

11 THE COURT: That's fine.

12 The screen notwithstanding, Mr. Yang, if you need to
13 stand over here between the front pew and the jury box in that
14 corner so you can have a better view, you have freedom to do
15 that.

16 MR. YANG: Thank you, Your Honor.

17 THE COURT: All right. Anything else?

18 MR. MIRZAIE: No. Thank you, Your Honor.

19 THE COURT: Let's proceed with cross examination.

20 MR. MIRZAIE: Good morning, everybody.

21 CROSS EXAMINATION

22 BY MR. MIRZAIE:

10:46

23 Q. Good morning, Mr. Hansen. We've met before. Right?

24 A. Yes.

25 Q. Good to see you again.

1 Now, sir, you run the Firebase message team. Correct?

2 A. I lead the Firebase messaging team, yeah.

3 Q. And you've been at Google for over 10 years. Correct?

4 A. I've been at Google for almost 18 years.

5 Q. And Google pays your salary, and that's why you're here
6 as a fact witness. Correct?

7 A. Google does pay my salary, and I've stated earlier why I
8 was here.

9 Q. And, sir, I'm going to ask yes or no questions. If you
10 could do your best to answer yes or no, I'd appreciate it.

11 A. Okay.

12 Q. Sir, so you're not here as an expert witness. Correct?

13 A. Correct.

14 Q. And you were here for opening statements and preliminary
15 instructions on Monday, weren't you?

16 A. I was here for opening statements.

17 Q. And so you know that only expert witnesses can provide
18 testimony comparing the claim requirements to the accused
19 product or the prior art, don't you?

20 A. Yes.

10:47 21 Q. And so all the testimony you provided are not expert
22 opinions on either the subject of infringement or validity.
23 Correct? They're not expert opinions. Correct?

24 A. Correct.

25 Q. And you've -- you understand that there's a separate

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1 system accused in this case as well, Samsung's SPP system.

2 Correct?

3 A. I do understand that that's involved here, too.

4 Q. And you provided no testimony on that today, to be clear.

5 Correct?

6 A. Correct.

10:48

7 Q. Now, sir, you'd agree that for all witnesses, the jury
8 should be able to consider whether that witness is neutral or
9 whether that witness has a bias. Correct?

10 A. Of course.

11 Q. And you wouldn't deny that Google and Samsung have a
12 close business partnership, would you?

13 A. No.

14 Q. And, in fact, Samsung is Android's top customer.
15 Correct?

16 A. I don't know that as a fact one way or the other.

10:48

17 Q. In any event, and you understand as the jury heard, that
18 Samsung has agreed, the parties have agreed that Google has a
19 financial interest in the outcome of this case through its
20 relationship with Samsung. Correct?

21 A. Yes.

22 Q. And so you're not just some neutral third party. There's
23 a financial relationship between Google and Samsung. Fair?

24 A. Yes.

25 Q. And the jury can consider that along with all the other

1 facts. Right?

2 A. Yes.

10:49

3 Q. Now, you are the only Google witness appearing in this
4 case for Samsung. Correct?

5 A. I don't know that to be a fact one way or the other.

6 Q. Now, you understand that Samsung, based on being here on
7 Monday, listening to openings and instructions, Samsung has to
8 provide actual evidence, clear and convincing evidence for its
9 invalidity defense. You understand that, don't you?

10:50

10 A. I'm an engineer. I don't really understand what that
11 means. I'm sorry.

12 Q. I understand. But the Court instructed in the segment
13 you were here that means that the jury must have an abiding
14 conviction that the truth of a party's factual contentions are
15 highly probable. Do you recall that?

16 A. Yes, but I really don't know what that -- those terms
17 mean. So for me, I'm just going to say I remember hearing
18 stuff about approximately like that.

10:50

19 Q. And you were here for opening, so you've seen Samsung
20 argue and they've argued since opening that the architecture
21 diagram, the server architecture diagrams for the systems in
22 this case, are somehow an important part of this case. Do you
23 recall that?

24 A. I do recall the server architecture being an important
25 part of the case.

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1 Q. Now, sir, you didn't show the jury any diagram showing
2 the server architecture for Gtalk. Correct?

3 A. Correct.

10:50

4 Q. You didn't show the jury any internal diagram or
5 illustration showing how the pieces connected together for
6 Gtalk prior to 2009. Correct?

7 A. Correct.

8 Q. You didn't show the jury any technical diagram of any
9 sort showing any third-party app developer using any cloud
10 application servers through a technical diagram and how it
11 pushed any notifications through the GtalkService prior to
12 2009. Correct?

10:51

13 A. Could you do that one again? That was a lot in that
14 question.

15 Q. I'll ask a different question.

16 A. Okay.

17 Q. Sir, as an engineer, as you just stated, you'd agree that
18 the source code will show the truth of how products operate.
19 Fair?

20 A. I think the source code is a really good source for that
21 information.

22 Q. And you actually agree that it will show the truth of how
23 products operate. Correct?

10:52

24 A. I'm not sure I understand.

25 Q. Okay. But you agree that it would -- it's a really good

1 source for the information of how the products operate.

2 Correct?

3 A. Correct. It's a really good source.

4 Q. Now, you didn't show the jury any source code for any
5 commercially-released Android versions. Correct?

6 A. Correct.

7 Q. No code for Android 1.0. Correct?

8 A. Correct.

9 Q. And even the phone that you held up, that wouldn't have
10 had the 0.9 code that you referenced in your testimony.

11 Correct?

12 A. That 0.9 was before Android was released, so it would
13 not.

14 Q. So that would have nothing -- your phone would have
15 nothing to do with the actual 0.9 document that we referenced
16 today. Correct?

17 A. Correct.

18 Q. Now, I notice that you referred to package name and
19 setPackage. Do you recall that during your direct testimony?

20 A. I do remember those coming up.

21 Q. And I just want to be very clear. SetPackage, that call
22 did not exist in 2008 or 2009. Correct?

23 A. Correct.

24 Q. And you didn't show the jury any documents showing that
25 package name was used as an action item. Correct?

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1 A. Correct.

10:53

2 Q. And, sir, the GtalkService code was closed source.

3 Correct?

4 A. Correct.

5 Q. And that means it wasn't open to the public. Right?

6 A. Yes.

7 Q. And you mentioned Calendar and Contacts and Gmail. You
8 didn't show the jury any source code for those items.

9 Correct?

10 A. Correct.

10:54

11 Q. Now, sir, this is -- you were here for opening
12 statements. Right?

13 A. Yes.

14 MR. MIRZAIE: And if we could, Mr. Mahon, pull up
15 day 1 trial transcript at page 150:14 through 16.

16 Q. (BY MR. MIRZAIE) You mentioned a few comments on your
17 direct examination about servers and what's considered a
18 server. Do you recall that testimony, sir?

10:54

19 A. Sorry. Do you want me to -- I should listen to you
20 instead of reading on the screen.

21 THE COURT: Just a minute. You're on your feet, Mr.
22 Yang?

23 MR. YANG: Yeah, may we approach, Your Honor?

24 THE COURT: Approach the bench.

25 (The following was had outside the hearing of the

1 jury.)

2 THE COURT: What's the issue?

3 MR. YANG: Your Honor, this language seems to be
4 quoting what the patent says, and he hasn't established that
5 Todd Hansen has seen the patent. There's no foundation for
6 this line of questioning. He in fact hasn't seen the patent.
10:55 7 So I think it's unfair for him to be asked questions of what
8 the patent does and doesn't disclose.

9 MR. MIRZAIE: Your Honor, he said he was here during
10 opening, and during his direct examination he provided
11 testimony about what he believed a server included and what
12 would be considered a server. And I'm just referencing the
13 opening statement -- statement and whether he was here for
10:55 14 that and whether he understood that, not referencing whether
15 he reviewed the patent.

16 THE COURT: I don't find anything objectionable in
17 the question. I allow it.

18 Mr. Mirzaie, you need to slow down some, too.

19 MR. MIRZAIE: All right. Thank you.

20 THE COURT: All right.

21 (The following was had in the presence and hearing
22 of the jury.)

23 THE COURT: Let's continue, counsel.

24 Q. (BY MR. MIRZAIE) Mr. Hansen, you were here for opening
25 statements as we just confirmed. Correct?

1 A. Yes.

2 MR. MIRZAIE: And if we can pull up the day 1 trial
10:55 3 transcript at page 150, lines 14 through 16.

4 Q. (BY MR. MIRZAIE) And so you heard Headwater's counsel
5 tell the jury that the patent itself, as you'll see, makes
6 clear that the message server can be implemented across
7 multiple servers and multiple machines, even server farms.

8 Do you see that?

9 A. I see that in the transcript.

10 Q. And you wouldn't dispute that the patent itself makes
10:56 11 that clear, would you?

12 A. I'm an engineer. I'm not a patent attorney.

13 Q. But --

14 THE COURT: Just a minute, Mr. Yang. If you're
15 going to stand up, I need to hear an objection. If you're not
16 going to object, don't stand up.

17 MR. YANG: He said he's going to move on, so I'm all
18 right. Thank you, Your Honor. Sorry. I was about to object.
19 I didn't want to interrupt.

20 THE COURT: Have a seat. Let's continue.

21 Q. (BY MR. MIRZAIE) And during your direct examination with
10:56 22 Mr. Yang, you provided some testimony on what you believe a
23 server is. Do you recall that?

24 A. Yes.

25 Q. And just to be clear, because you're an engineer, you

1 didn't apply that meaning to those statements. Correct?

2 A. I didn't apply the meaning from the transcript?

3 Q. Yes.

4 A. Correct. Correct.

5 Q. Thank you. Now, sir, you're not here to tell the jury
6 that server farms weren't around in 2008 or 2009, are you?

10:57 7 A. I think I was pretty clear in my testimony that there is
8 5,000 MCS servers.

9 Q. And specifically you're not here to tell the jury that
10 distributed nationwide architectures or I think you called it
11 divided nationwide architectures weren't around in 2008 or
12 2009, are you?

13 A. The divided server architecture we ran was around in
14 2008.

15 Q. Yeah. And other companies had similar architecture.
16 Correct?

17 A. Presumably.

10:57 18 Q. Okay. And we can all agree that the distributed or
19 divided server architecture is one type of server
20 architecture. Correct?

21 A. Yes. There are multiple ways to set up your
22 infrastructure.

23 Q. Yeah. But -- there are multiple ways. But a divided
24 architecture or a distributed architecture, it's still a
25 server architecture nevertheless. Correct?

1 A. Sure, yes.

10:58

2 Q. And you mentioned during your direct examination that you
3 couldn't support millions of apps and devices across the
4 country with a single server box, I think. That's what my
5 notes indicate anyway. Do you recall that testimony?

6 A. I recall that testimony, but I don't think you said it
7 quite how I said it.

8 Q. How did you say it?

9 A. I said that having all of the servers perform the same
10 function, the same responsibilities, wasn't going to scale to
11 billions of devices.

10:58

12 Q. Yes. And were you here for Dr. Raleigh's testimony about
13 what his patent was meant to enable?

14 A. No, I was not.

15 Q. For nationwide coverage?

16 THE COURT: Let's make sure the question is finished
17 before the answer is given, and let's try to make sure you-all
18 don't speak over each other, please.

19 THE WITNESS: Yes, sir.

20 MR. MIRZAIE: Will do, Your Honor.

21 THE COURT: Next question, please, counsel.

10:59

22 Q. (BY MR. MIRZAIE) And, sir, before the filing of the
23 lawsuit, you yourself have referred to that server farm
24 architecture by calling it just an FCM server, haven't you?

25 A. Can you show me where you're getting that?

1 Q. Sure.

2 MR. MIRZAIE: If we could, Mr. Mahon, pull up the
3 video, and we can just pull up the still of the video.

10:59

4 Q. (BY MR. MIRZAIE) There's an engaged Firebase messaging
5 video that you posted on YouTube a few years ago. Do you
6 recall that?

7 A. Yeah. That was during the pandemic to help people
8 develop engagement apps.

9 Q. Right. And to be clear, it was about the FCM system, was
10 it not?

11 A. It was about using the FCM system.

12 Q. And in that video, you describe the system as the FCM
13 server, didn't you?

14 A. I don't recall. That's why I asked if we have that.

11:00

15 Q. And I'll be more specific. What you said was, after you
16 send the topic message to FCM, the FCM server handles fanning
17 out the messages to each subscriber for you.

18 Do you recall making that statement, sir? Yes or no.

19 A. I don't recall that. It was a long time ago.

11:00

20 MR. MIRZAIE: Do we have the video, Mr. Mahon? The
21 video would be at -- the YouTube video would be from 12
22 minutes to 12 minutes and 14 seconds.

23 Q. (BY MR. MIRZAIE) And while Mr. Mahon is pulling up that
24 video, sir, you yourself have under oath referred to the
25 messages that would go to the FCM server. Correct?

11:01 1 A. They would go to the FCM server being the session server,
2 yeah.

3 Q. Correct?

4 A. Yeah.

5 Q. FCM server, singular. Correct?

6 A. Because I was talking about the session servers.

7 Q. Now, you'd also agree that Firebase documents created
8 before this litigation describe the FCM as being connected to
9 the user device. Correct?

10 A. I mean, FCM as a -- as a service was connected to the
11 user device.

11:02 12 Q. So you would agree that the FCM is connected as a service
13 to the user device. Correct?

14 A. The FCM service is connected to the user device is how I
15 would say it.

16 Q. Thank you.

17 THE COURT: Let me ask a question, counsel. Earlier
18 you asked the witness if he referred to something in a certain
19 way and he said, I don't recall, and then you referenced this
11:02 20 YouTube video which you started to pull up. If you're going
21 to refresh his recollection, you need to do it outside the
22 presence of the jury. If he is going to be impeached with
23 this as a prior inconsistent statement, you need to lay the
24 predicate before you do that. I'm not at all sure there is a
25 basis to play a video at this point, unless it's either agreed

1 to or some kind of pre-admitted item.

2 MR. MIRZAIE: Okay, Your Honor. I can move on, Your
3 Honor.

4 THE COURT: All right. Let's move on.

11:03 5 Q. (BY MR. MIRZAIE) And during your direct examination, you
6 didn't show the jury a single document referring to the FCM
7 server architecture or the FCM architecture, did you?

8 A. The -- the slides that we showed from Mr. Byrne showed
9 the architecture.

11:03 10 Q. And to be clear, you didn't show the jury the FCM
11 architectural overview document, though, did you?

12 A. No.

13 Q. Well, we --

14 MR. MIRZAIE: If we could pull up PTX 343.

15 Q. (BY MR. MIRZAIE) We have it with us, and if you look at
16 the top of the screen, sir, the title of this is "FCM
17 Architectural Overview." Correct?

18 A. Yes.

19 Q. And if we look down at the diagram on that page, this is
20 how this document -- which was created before the litigation
21 in this case. Correct?

11:03 22 A. Correct.

23 Q. This is how the document refers to the FCM system.
24 Correct?

25 A. Correct.

1 Q. And the one on the left-hand side, those would represent
2 the app developers. Correct?

3 A. Correct.

4 Q. Now, the column that's listed as 2, this document uses
5 that single icon you see right there to refer to that as the
6 FCM backend. Correct?

7 A. Correct.

11:04 8 Q. And 3 is the platform level message transport used by the
9 FCM backend. Correct?

10 A. Correct.

11 Q. And 4 would be the -- it's a column of the devices, and
12 it refers to the SDK, the FCM SDK on the devices. Correct?

13 A. Correct.

14 Q. Now, if we look right below it in the FCM architectural
15 overview --

16 MR. MIRZAIE: If we jump out of that screen, Mr.
17 Mahon.

11:04 18 Q. (BY MR. MIRZAIE) And I want you to focus on columns 2
19 and 3. Column 1 is the app developer. Now, column 2 starts
20 the FCM backend, and this is described in this document as
21 having a function of, quote, "accepts message requests,
22 performs fanout of messages via topics, and generates message
23 metadata such as the message ID."

24 Did I read that correctly?

25 A. Yes.

11:05 1 Q. So, to be clear, it accepts message questions, and it
2 also, quote, "generates message metadata such as the message
3 ID." Right?

4 A. Yes.

5 Q. And 3 -- column 3 is the platform-level transport layer
6 which routes the message to the targeted device, handles
7 message delivery, and applies platform-specific configuration
8 where appropriate. Right?

9 A. Correct.

11:06 10 Q. Now, Samsung has referred to column 2, I believe,
11 throughout -- part of column 2 throughout the litigation as
12 request servers. You were here for that for opening. They
13 only refer to it as request servers. Do you recall that?

14 A. I don't remember the term.

15 Q. Well, I'll represent to you that they've referred to part
16 of column 2 as a request server.

11:06 17 Now, can you -- the actual functionality of that in
18 suggesting that it's not a message server, that wouldn't be
19 correct. Right?

20 A. Are we talking about the Samsung push thing or FCM here?

21 Q. No, the FCM here.

22 A. Okay.

23 Q. And I'll ask a different question. Can you remind the
24 jury, sir, what the 'M' in FCM stands for?

25 A. Messaging.

1 Q. So those are messaging servers. Correct?

2 A. Right.

3 Q. And it's in a network system. You don't deny that, do
4 you?

5 A. It's in a network, yeah.

11:06 6 Q. Okay. And at any rate, so just to summarize, as we look
7 here on the screen, sir, the FCM backend, that messaging
8 server would receive requests from application servers to
9 transmit data. Right?

10 A. Right.

11 Q. And it would generate data messages, including the,
12 quote, data -- the metadata. Right?

13 A. Yes.

11:07 14 Q. And it would also transmit data messages to the device,
15 which we just discussed, through the platform-level message
16 layer. Right?

17 A. No.

18 Q. You're saying that this doesn't show it transmitting?

19 A. So the -- column 2 is what we talked about before as
20 session servers or data message backend send. Android
21 (unintelligible) layer is the mobile connection server.

22 Q. But the mobile connection server, we agreed, is used by
23 FCM. Correct?

11:07 24 A. Mobile connection servers are responsible for maintaining
25 the connection and delivering those messages over that

1 connection.

2 Q. You're not here to tell the jury that they don't
3 communicate with each other or work with each other, are you?

4 A. I'm confused how you got there.

5 Q. The FCM backend, sir, relies on the platform-level
6 message transport, as we see on this architectural diagram.
7 Right?

8 A. Yes. And the message transport in this is mobile
9 connection server.

10 Q. And if you could focus on the question, sir. That
11 platform-level transport layer routes the message to the
12 targeted device. Right?

13 A. Yeah. It's responsible for maintaining that connection
14 and delivering to that device.

15 THE COURT: All right, gentlemen. You're both
16 getting faster and faster, and I've told you both to talk more
17 slowly. This back and forth does no good unless the jury can
18 follow it, and I don't see how they can follow it when I can't
19 follow it. So slow down, both of you. Okay?

20 MR. MIRZAIE: Sure thing.

21 THE WITNESS: Yes, sir.

22 THE COURT: Go ahead.

23 Q. (BY MR. MIRZAIE) So you don't deny that column 3, the
24 platform-level message transport, transmits data messages from
25 the FCM backend to the device. Correct, sir?

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1 A. Correct.

2 Q. Okay. And so if we -- based on that testimony --

3 MR. MIRZAIE: If I may, Your Honor, approach the
4 easel?

5 THE COURT: You may.

11:09

6 Q. (BY MR. MIRZAIE) This is the FCM architectural overview
7 at PTX 343 that we just went over. Correct?

8 A. Yes.

9 Q. And this is the same diagram that we just discussed.
10 Right?

11 A. Yes.

12 Q. And the same verbiage for columns 2 and 3 that we just
13 discussed in your testimony, wasn't it?

14 A. I assume that part.

15 Q. And we agree that the FCM backend receives requests from
16 application servers to transmit data. Do you recall that
17 testimony?

11:10

18 A. The FCM backend, which I would call the session server or
19 DMB, does receive messages from the application server.

20 Q. And we agree that it generates data messages. Do you
21 recall that testimony?

22 A. Yes.

23 Q. And we agree that the platform-level message transport
24 then transmits those data messages to the device. Correct?

25 A. Correct.

1 Q. And do you recall seeing this slide in Samsung's opening
2 statement?

3 A. I recall the diagram. I don't remember which opening
4 statement.

11:10 5 Q. Sir --

6 MR. MIRZAIE: If we could have Samsung's opening
7 statement.

8 We can move on.

9 Q. (BY MR. MIRZAIE) Now, sir, you showed the jury the -- a
10 document with JX 52. Correct?

11:11 11 A. Was that the one that had the one by Mr. Byrne?

12 Q. Yes.

13 MR. MIRZAIE: If we can pull that document up,
14 Mr. Mahon.

15 Q. (BY MR. MIRZAIE) Now, do you recall this part of the
16 document? I don't believe you showed the jury this part.
17 Correct?

18 A. We did not cover this in my testimony today.

19 Q. Okay. Now -- but this is part of the same document that
20 you were discussing with the jury. Right?

21 A. Yes.

11:11 22 Q. And do you see the MCS there?

23 A. Yes; mobile connection server.

24 Q. And that's the platform transport layer used by the FCM
25 backend that we just discussed with reference to PTX 343.

1 Right?

2 A. Yes, except for I don't remember what 343 is. Is that
3 that diagram?

4 Q. Yeah.

5 A. Thank you.

6 Q. So you see in this illustration the endpoints of the
11:11 7 cloud there, the MCS cloud, just the outline endpoints?

8 A. We're talking about the arrows?

9 Q. No, the actual cloud outlining the MCS that has a blue
10 arrow going up and down to the GCM module. Do you see that?

11 A. Yes.

12 Q. And that MCS endpoint, as illustrated in this diagram,
13 messages are sent in-band over that connection. Correct? Did
11:12 14 I quote the document correctly in the second bullet point,
15 sir?

16 A. Yeah. Yes.

17 Q. Okay. So messages are sent in-band from there, that
18 endpoint, down to the GCM module, according to this document.
19 Right?

20 A. Yes.

21 Q. And I think you testified about this on your direct
22 examination, but you'd agree that between that endpoint server
23 is a channel between that endpoint and the device. Correct?

11:13 24 A. It would be a TCP connection.

25 Q. Right; a TCP connection that has SSL encryption. Right?

1 A. Correct.

2 Q. Now, Google documentation before this lawsuit was filed
3 called that the FCM server endpoint, didn't it?

4 A. I don't know. I would have to see it in context.

11:13

5 MR. MIRZAIE: Well, if we could pull up the blog
6 document at 362494, sir.

7 MR. YANG: Objection, Your Honor.

8 Is this the one I showed you?

9 MR. MIRZAIE: No.

10 MR. YANG: Your Honor, I think he needs to lay the
11 foundation for this witness to see this before we publish it.

12 MR. MIRZAIE: This is not impeachment, Your Honor.
13 I'm using a produced document to talk to him about. It's an
14 FCM document.

15 THE COURT: All right. This is not a pre-admitted
16 exhibit.

17 MR. MIRZAIE: No.

11:13

18 THE COURT: All right. You do need to lay some
19 foundation that he has some personal knowledge of it.

20 MR. MIRZAIE: Okay.

21 THE COURT: All right?

22 MR. MIRZAIE: Thanks.

23 THE COURT: Why don't you lay the foundation and
24 then we'll see whether it's going to be published or not.

25 MR. MIRZAIE: Certainly, Your Honor.

1 Q. (BY MR. MIRZAIE) You're familiar with the Google
2 security blog site for FCM servers, aren't you, sir?

3 A. No.

4 Q. You're telling the jury that you have not seen, as the
11:14 5 lead in the FCM team, the Google security blog site that
6 discusses the FCM server?

7 A. No, I don't recall a Google security blog.

8 Q. You're not doubting that one exists, though. Right?

9 A. No.

10 Q. Okay. We'll get back to that.

11 If we go back to the same image from PTX 52-10, the
12 information sent from the endpoint of the MCS server down to
11:14 13 the GCM, that includes, as you said, message payload and
14 control information. Correct?

15 A. It can include anything. Right? It was a very generic
16 interface.

17 Q. And so it included payload and also control information.
18 Right, sir?

19 A. If the app developer wanted to send control information,
20 it could include that.

21 Q. And it included, as it states right here, heartbeats. Do
22 you see that?

23 A. Yes.

11:15 24 Q. And it can include message acknowledgement or acks.
25 Correct?

1 A. Yes.

2 Q. And you don't know when those message acks were
3 introduced in the Google timeline, development timeline.
4 Correct?

5 A. I don't have it in front of me, but I believe it was in
6 the -- before the G1 was released.

7 Q. Now, the -- and the apps on the Samsung phone, or any
8 Android phone, it still has the ability to reach directly out
11:15 9 to the app server without using FCM all the time. Certain
10 apps do. Right?

11 A. Yeah. Apps commonly will reach home to their server
12 without using FCM.

13 Q. Okay. So then, in addition to the FCM system channel,
14 the apps can still reach out directly to the app server like
15 they did in the old days. Right?

16 A. Yeah, apps can call home to their own server.

17 Q. That's just like Headwater described it in its opening
18 statement, isn't it?

19 A. I'm an engineer. I don't know.

11:16 20 MR. MIRZAIE: Now, if we go to slide 8, actually,
21 sir, of this same presentation. And apologies--actually JX 52
22 at page 8.

23 Q. (BY MR. MIRZAIE) This is a document that you discussed
24 with the jury. Do you recall that the document?

25 A. Yes, this document I do recall.

1 Q. Yeah, but you didn't discuss page 8 with the jury.

2 Right?

3 A. Correct.

11:16

4 Q. Now, what page 8 shows is that a token is how the FCM
5 identifies a particular install of an app on a device. Right?

6 A. Yeah.

7 Q. And by the way, the FCM token is transmitted through the
8 same blue line that we were talking about from the cloud down
9 to the device. Right?

10 A. No.

11 Q. Now, the -- the app is inside the device. Correct?

12 A. Correct.

11:17

13 Q. And the token, you're not denying that it includes the
14 information listed here, including the app package name.
15 Right?

16 A. Correct.

17 Q. And you didn't show the jury any documents that the Gtalk
18 before 2009 used an app package name in a token in this
19 manner, did you?

20 A. Correct.

11:17

21 Q. Now, you don't deny that the app package name will
22 uniquely identify an app, do you?

23 A. No.

24 Q. Now, if we look at the Android transport layer that we
25 were discussing a moment ago -- do you recall that testimony,

1 sir?

2 A. Yes.

3 Q. And that is a TCP connection that's encrypted with SSL.

4 Right?

5 A. Yes.

6 Q. And now that layer, according to your testimony, that

11:18 7 includes as the endpoint the GCM module itself, doesn't it?

8 A. Yes.

9 Q. And the GCM module is part of GMS core. Right?

10 A. Yes.

11 Q. And the GCM module is responsible for correctly routing

12 the message to the app. Right?

11:18 13 A. Could you state that again?

14 Q. Yeah. The GCM module is responsible for correctly

15 routing the message to the app. Right?

16 A. Yes.

17 Q. And how it does that is through a communication called

18 interprocess communication.

19 A. I referred to it as intents.

20 Q. But you've also referred to it as interprocess

21 communication on the device that happens. Right?

11:19 22 A. Potentially.

23 Q. Well, do you have your deposition testimony in front of

24 you, sir? I think it's on tab 1.

25 A. Okay. I mean, the interprocess communication is a more

1 generic version, yes.

2 Q. Okay. So you're agreeing that the communication --
3 strike that.

4 The way that the GCM module correctly routes the message
5 to the app is sometimes called interprocess communication.

11:19 6 You agree. Right?

7 A. Yeah. In a general sense, yeah.

8 Q. Thank you.

9 Now, you'd agree that the setPackage call is used.

10 Correct?

11 A. In the current version? Yes.

12 Q. And you'd also agree it was not used in the prior version
13 before 2009. Right?

14 A. Yes.

15 Q. And you were here for opening statements and so you
11:20 16 recall that this matter of intents is an issue that we've been
17 discussing throughout the trial. Do you recall that?

18 A. Yes.

19 Q. And, sir, you weren't even involved in working with
20 intents. Isn't that right?

21 A. Correct.

22 Q. And you had no specific familiarity with the setPackage
23 string call. Isn't that right?

11:20 24 A. During the deposition, that's true; and then I went and
25 read about it.

1 Q. And because you weren't working with intents or the
2 intents system at all, you wouldn't be the person to know
3 about that. Right?

4 A. Yeah. I think that, you know, during the deposition I
5 didn't have that information.

6 Q. But you've seen some information now. Right?

7 A. Yeah.

11:21 8 MR. MIRZAIE: And Your Honor, could I approach the
9 easel again?

10 THE COURT: Yes.

11 MR. MIRZAIE: Thank you.

12 Q. (BY MR. MIRZAIE) And based on the information that
13 you've seen since then, you'd agree that unless the
11:21 14 application requires it, you can make intents explicit by
15 calling setPackage. That's how internal Google documents
16 refer to it before this litigation was filed. Correct?

17 MR. YANG: Your Honor, may I approach?

18 THE COURT: Approach the bench.

19 (The following was had outside the hearing of the
11:22 20 jury.)

21 THE COURT: What's the issue?

22 MR. YANG: So that posterboard quotes JX 50, which
23 is the document that Todd Hansen said he had never seen
24 before, and counsel couldn't raise a foundation for it, so now
25 he's simply just putting it onto a board now to ask him

1 questions about that same document.

2 MR. MIRZAIE: This is a pre-admitted exhibit, and we
3 discuss it in his deposition, he saw it in his deposition, and
11:22 4 now he said that he's actually reviewed intents since his
5 deposition.

6 THE COURT: Well, the board displayed to the jury at
7 present has several pre-admitted exhibits referenced on it
8 with various numbers. I'm not sure which ones we're talking
9 about.

10 There is not a foundation problem with a pre-admitted
11 exhibit that's already been tested. If the particular Google
12 internal document he had difficulty remembering or being able
11:23 13 to -- you were not able to lay a foundation for, if that's on
14 there, and I can't see over your shoulder to see if it is --

15 MR. YANG: It's JX 50, your Honor.

16 THE COURT: -- then I assume you're not going to ask
17 him about that.

18 MR. MIRZAIE: And Your Honor, he just said it -- I
19 just want to ask him, and he said he has now educated himself
20 on intents, and I'm just going to ask him he didn't educate
21 himself with this document, because he just told the jury he
22 educated himself since the deposition on intents.

23 THE COURT: Okay. Just a minute.

24 MR. YANG: Sorry.

11:23 25 THE COURT: I see the two patents-in-suit. I see

1 JX 50 and JX 52. I see a reference to PTX 335. I don't see
2 the Google document that there was the foundation issue with.

3 MR. YANG: It's JX 50. That's the one that Todd
4 Hansen said he hadn't seen before. And right now the board
5 posts up this inflammatory language--intent and hijacking--and
11:24 6 he wants to confirm now that he's never seen it, even though
7 he already confirmed without posting this language on the
8 board that he hasn't seen it.

9 MR. MIRZAIE: Your Honor, if I may.

10 The other documents he used on his direct, I asked him
11 about intents. He said since his deposition he's educated
12 himself on intents. He just said that. And so this is a
13 pre-admitted exhibit, and I'm just going to ask him that that
14 education did not include this document. And if he says no, I
11:24 15 can move on; if he says yes, then I'm entitled to ask him
16 about the document.

17 MR. YANG: I propose that to do so that he ask that
18 question using the version in the binder as opposed to
19 actually publishing the document to the jury, or language from
20 the document to the jury.

21 THE COURT: All right. The Court's process of
22 pre-admitting exhibits in advance of the trial is so that we
23 can save time and streamline the process. And any witness is
11:25 24 subject to being questioned with a pre-admitted exhibit. That
25 doesn't mean every witness has personal knowledge of every

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1 exhibit.

2 If this gentleman doesn't have any personal
3 knowledge--he's a fact witness--then you need to move on and
4 not go into it. If he has personal knowledge of it, then
5 there's not a foundation problem because it's already
6 pre-admitted.

7 MR. MIRZAIE: Yeah.

8 THE COURT: And that should resolve the issue, as I
9 see it.

10 MR. MIRZAIE: So I'll ask Mr. Mahon to pull up the
11 exhibit for him on his screen so he can confirm whether he
11:25 12 reviewed it or not after his deposition. He reviewed it
13 during his deposition, to be clear, but I'm just going to ask
14 him that way so that he can have the full document in front of
15 him.

16 THE COURT: Well, once your IT person puts it on the
17 screen, everything the witness sees the jury sees. There's
18 not a discreet screen on the witness stand.

19 MR. MIRZAIE: Then I can ask him to just review it
20 in his binder.

21 THE COURT: Reference it in his binder --

22 MR. MIRZAIE: Okay.

23 THE COURT: -- and then if he acknowledges he knows
11:26 24 it or has personal knowledge of it, fine.

25 MR. MIRZAIE: Okay.

1 THE COURT: All right.

2 MR. MIRZAIE: Thank you.

3 THE COURT: If not, then move on.

4 MR. MIRZAIE: Okay.

5 MR. YANG: Can we cover this up for now since that
6 has the language --

7 THE COURT: Why don't you pull that slide down until
8 you've DONE that with him, and then assuming he has personal
9 knowledge of it, put this demonstrative back up.

10 MR. MIRZAIE: Okay. I'll cover it with this one
11 that we were just on.

12 THE COURT: That's fine. Let's move on.

13 (The following was had in the presence and hearing
14 of the jury.)

11:27 15 Q. (BY MR. MIRZAIE) Sir, you have a binder in front of you,
16 don't you?

17 A. I have many binders. I assume you mean the cross binder?

18 Q. Yes, exactly. And if you could turn to a tab entitled --
19 with the label JX 50.

20 A. JX 50 you said?

21 Q. Yes; Joint Exhibit 50.

11:27 22 A. Okay.

23 THE COURT: It should be tab No. 4.

24 MR. MIRZAIE: And we can take that down for now.

25 Q. (BY MR. MIRZAIE) Tab No. 4. Are you there?

1 A. Yes, I'm there.

2 Q. And this is a document that you were shown at your
3 deposition. Correct?

4 A. Yes, I believe so.

5 Q. And I believe you just testified that you didn't have the
6 education on intents before the deposition, but after the
7 deposition you went and reviewed more information. Did I
8 characterize that fairly?

9 A. Yes.

11:27 10 Q. Was this a document that you used to educate yourself
11 after the deposition?

12 A. Yes.

13 Q. Thank you.

14 MR. MIRZAIE: May I publish the board, Your Honor?

15 THE COURT: You may.

16 Q. (BY MR. MIRZAIE) And so you know that, according to this
17 internal document, the title of JX 50 is "Implicit Intent
18 Hijacking." Correct?

19 A. Correct.

11:28 20 Q. And it proposes a mitigation to that hijacking. Correct?

21 A. Correct.

22 Q. And it does so under the label "Security Guides." Right?

23 A. Yes.

24 Q. So you're not here to tell the jury that mitigating
25 implicit intent hijacking is not a form of making the process

1 more secure, are you?

2 A. I'm sorry. Could you state that again, because I thought
3 there was a 'not' in there that I didn't understand.

4 Q. Sure. I'll ask a different question.

11:28 5 This document states that you can make intents explicit
6 by calling setPackage. Correct?

7 A. Yes.

8 Q. And by doing that, you prevent untrusted applications
9 from intercepting the data along with the intent. Right?

10 A. Right.

11 Q. And if you don't make it implicit, you're subject to the
12 concern of implicit intent hijacking. Fair?

13 A. Yes. That's one way to work around this -- the issue.

11:29 14 Q. And do you see that the heading of the guide is "Security
15 Guides"? Right? It's right there --

16 A. I see the word 'security' and 'guides'.

17 Q. And all of that came out after early 2009 when my
18 client's priority dates were. Correct? SetPackage, sir. We
19 just talked about that.

20 A. Right. Okay. SetPackage came out after 2009, yes.

21 Q. And we already talked about the fact that the package
11:29 22 name being used in the FCM token also came out after 2009.
23 Right?

24 A. I believe so.

25 Q. Okay. And, sir, you'd agree that in implicit intent

1 doesn't tell you which app or module to specifically target,
2 and so it can be subscribed to by many. Fair?

11:30 3 A. I think that an implicit intent could be subscribed to by
4 many.

5 Q. Okay. And you'd agree that an implicit intent doesn't
6 tell you which app or module to specifically target. Right?

7 A. There can be identifiers in the intent that tell which
8 one the message should go to.

9 Q. Sir, can you go to your deposition tab? I think that's
10 tab 1.

11 A. Yes.

11:30 12 Q. And if you could turn to page 135, at line 20, through
13 136, line 1. And let me know when you've read that, please.

14 A. You said only line 1 on 136?

15 Q. Yeah. Yes. So line 20 through line 1.

11:31 16 THE COURT: Just a minute. Ladies and gentlemen of
17 the jury, I need to check on a couple of things, including
18 where that noise is coming from.

19 I'm going to ask you to retire to the jury room for just
20 a minute. Leave your notebooks in your chairs, follow all the
21 instructions I've given you, and we'll have you back as soon
22 as we can to continue.

23 The jury should retire to the jury room.

24 (Whereupon, the jury left the courtroom.)

11:32 25 THE COURT: Be seated, please.

1 Let's go off the record.

11:32 2 (Pause in proceedings.)

3 THE COURT: Court stands in recess.

11:39 4 (Brief recess.)

5 THE COURT: Counsel, to give the Court an
6 opportunity to address these unexpected issues, we're going to
7 break for lunch now, and I'll tell the Court Security Officer
8 to let the jury know that they're on lunch recess, and
9 hopefully in the next 45 or 50 minutes we can get these
10 resolved and get back on the record.

11:39

11 So we stand in recess for lunch.

12 (Lunch recess.)

13 THE COURT: Be seated, please.

12:40

14 All right, counsel. Are we ready to resume the direct
15 examination -- excuse me, the cross examination of Mr. Hansen?

16 MR. MIRZAIE: Yes, sir.

17 THE COURT: Let me verify one thing before we get
18 the jury back in the room. During the lunch break, somebody,
19 I assume from Plaintiff's side, was adding pages to the
20 witness' notebook and handed two random pages to one of my
21 staff members and said, Here, these are your copies.

12:40

22 Did the Defendants get the same two pages? Are we all
23 looking at the same material?

24 MR. YANG: We did, Your Honor.

25 THE COURT: Okay. That's a little bit unorthodox,

1 but nonetheless I wanted to make sure nobody was left out of
2 the process.

12:41 3 MR. MIRZAIE: Apologies, Your Honor. That's just
4 paper copies for the video that wasn't working during the
5 morning session, but understood, Your Honor.

6 THE COURT: Okay. Let's bring in the jury.

7 (Whereupon, the jury entered the courtroom.)

12:41 8 THE COURT: Mr. Hansen, if you'll go ahead and take
9 your seat on the witness stand, please, sir.

10 Welcome back, ladies and gentlemen. Have a seat, please.

11 I think the interruptions we experienced have been dealt
12 with. We'll hope and see that that's the end of it.

13 We're going to continue with the cross examination of Mr.
14 Todd Hansen by Plaintiff's counsel at this point.

15 Mr. Mirzaie, you may continue where you left off.

16 MR. MIRZAIE: Thank you, Your Honor.

17 Q. (BY MR. MIRZAIE) Good afternoon, Mr. Hansen. To
12:42 18 reorient everybody, before the break we were talking about the
19 difference between implicit intents and the hijacking problem
20 on the one hand versus explicit intents and the mitigation on
21 the other hand. Do you recall that?

22 A. Yes.

23 Q. And according to JX 50 shown on the board right here --

24 MR. MIRZAIE: And also if we could pull it up, pull
25 up the board on the screens.

12:43 1 May I, Your Honor?

2 THE COURT: You may.

3 Q. (BY MR. MIRZAIE) -- explicit intents can be set by
4 calling setPackage. Correct?

5 A. Correct.

6 Q. And doing so would prevent untrusted applications from
7 intercepting the data sent along with the intent. Correct?

8 A. Correct.

12:43 9 Q. And that was identified as a security guide in JX 50 in
10 the document that you're seeing on your screen, wasn't it? Do
11 you see -- oh. Do you see the term "security guide"?

12 A. Yes.

13 Q. Now, on the other hand, implicit intents certainly did
14 not work the same way. Agree?

15 A. That's a broad statement. Can you be more clear?

16 Q. Sure. Well, implicit intents can be subscribed to by
17 many apps. Correct?

12:44 18 A. It's my understanding that apps can listen to implicit
19 intents.

20 Q. Sir --

21 A. Many -- or other apps can.

22 Q. It's --

23 A. But I don't know of any apps that did that.

24 Q. Okay. But it's your understanding that Mr. Apps can
25 listen to implicit intents. Correct?

1 A. Correct.

2 Q. Okay. And it's also your understanding that the implicit
3 intent doesn't tell you which app or module to specifically
12:44 4 target. Right?

5 A. Well, we used off token to tell which app to target.

6 Q. Sir, and can you locate your deposition testimony? This
7 is right where we were --

8 A. Okay.

9 Q. -- before the lunch break. I think it's at tab 1. And
10 this is a copy of your sworn deposition earlier in this case
11 and go to page 135 --

12 A. Yeah.

12:45 13 Q. -- line 20 through 136, line 1.

14 A. I'm sorry. In my previous statement, I said off token,
15 but I meant action name. And you said 135?

16 Q. Yes, 135, line 20, through 136, line 1.

17 A. Right.

18 Q. Have you read that, sir?

19 A. Yes.

20 Q. And I'll ask you again: It's your understanding that
12:45 21 implicit intent doesn't tell you which app or module to
22 specifically target. Agree?

23 A. I'm not sure how that's relevant.

24 MR. MIRZAIE: Your Honor, may we publish page 135,
25 line 20, through 136, line 1?

12:45

1 THE COURT: What's the date of this deposition,
2 counsel? Because what I'm looking at and what you just asked
3 the witness about are not the same thing.

4 MR. MIRZAIE: Let me pull up --

5 THE COURT: Is this the September 10, 2024
6 deposition?

7 MR. MIRZAIE: Yes.

8 THE COURT: Page 135 of that deposition.

9 MR. MIRZAIE: Oh, excuse me. 134, line 20 through
10 135, line 1. Excuse me.

11 THE COURT: Okay.

12 THE WITNESS: Okay.

13 Q. (BY MR. MIRZAIE) And I'll give -- Mr. Hansen, I'll give
14 you a chance to read it again.

15 A. Okay. I see what you mean.

12:46

16 Q. Okay. So I'll ask you again. It is your understanding
17 that implicit intents don't tell you which app or module to
18 specifically target. Right, sir?

19 A. Uh-huh. But we used action name to specify that.

20 THE COURT: And, Mr. Hanson, uh-huh won't work.

21 THE WITNESS: Oh, I'm sorry.

22 THE COURT: You'll have to answer verbally.

23 THE WITNESS: Sorry. I'm being too informal. Yes,
24 but we used action name to specify that.

25 Q. (BY MR. MIRZAIE) And, sir, I'm going to ask you yes or

1 no questions, if you will.

2 A. Okay.

12:46

3 THE COURT: And the witness doesn't have to answer
4 yes or no. It depends on what the question calls for. But
5 the answer should not go beyond the scope of what the question
6 seeks to learn. Okay?

7 THE WITNESS: Okay.

8 THE COURT: And while we're on the subject, you made
9 a voluntary comment just a second ago that you were a little
10 too informal. I'd appreciate it if we could avoid yeah
11 instead of a yes or a correct. This record's going to be
12 potentially reviewed by an appellate court and theoretically
13 could be reviewed by the Supreme Court of the United States.
14 So if we can avoid the informality, that's helpful.

12:47

15 THE WITNESS: I will do my best.

16 THE COURT: All right. Let's go forward.

17 MR. MIRZAIE: Thank you.

18 Q. (BY MR. MIRZAIE) So, sir, you just mentioned actions in
19 your last answer, and you spoke about actions with your
20 attorney, Mr. Yang. Do you recall that?

21 A. Yes.

22 Q. But you'd agree with me that Android documents make clear
23 that an implicit intent specifies an action that can invoke
24 any app on the device able to perform the action. Correct?

25 A. Yes.

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12:48 1 Q. And you'd also agree that each app can have more than one
2 intent associated with it. Fair?

3 A. Yes.

4 Q. And, sir, the explicit intent by setPackaging, just as a
5 reminder, that was not available prior to 2009. Correct?

12:48 6 A. SetPackage was not available prior to 2009.

7 Q. And the mitigation described here in JX 50, that was not
8 available before 2009. Correct?

9 A. That particular mitigation was not available before 2009.

10 Q. No matter what was going on in the server side. Correct?

11 A. Correct.

12 Q. Now, a few other things I think were also missing from
13 the pre-2009 version of Gtalk and I wanted to ask you about a
14 few of them. Is that okay?

15 A. Yes.

16 Q. Now, the app's package name as used in Tokens, that was
17 introduced after 2008. Correct?

18 A. Correct.

19 Q. And the setPackage call was also introduced in 2011.
20 Right?

21 A. Correct.

22 Q. The app sending a registration ID to its app server, that
12:49 23 certainly wasn't available before C2DM. Right?

24 A. That's my understanding.

25 Q. And the Token registration process we talked about

1 earlier, that wasn't available before C2DM, either, was it?

2 A. That's my understanding.

3 Q. And, sir, you're familiar with the Google mobile services
4 SDK on the phone. Right? The GMS --

5 A. Yeah. I would have called it an APK instead of an SDK,
6 but yes.

12:49 7 Q. Okay. And that APK would not have been available in any
8 GCM module of a commercially-released product prior to 2009.
9 Correct?

10 A. Correct.

11 Q. And, sir, an app can be a software process. Correct?
12 Or an app is a software process. Right?

12:50 13 A. I tend to think of an app as something that you use, a
14 program that you start and that you use. It includes a
15 software process.

16 Q. Okay. And by the way, you would go so far as to say that
17 third-party interfaces for sending authenticated messages did
18 not exist in any push system before C2DM. Correct?

19 A. Could you state that again? Sorry.

20 Q. Yes.

21 A. Just for clarity.

12:50 22 Q. Sure. You would go so far as to say that the third-party
23 interface for third-party app servers sending authenticated
24 messages to Google did not exist before C2DM. Right?

25 A. Yes.

1 Q. Now, you mentioned Gtalk during your direct examination.
2 Do you recall that, sir?

3 A. Yes.

4 Q. The GtalkService?

5 A. The Google Talk Service, yes.

12:51 6 Q. And just looking at the bigger picture, that was a P2P or
7 peer-to-peer system. Right?

8 A. So by peer-to-peer, it would be going through central
9 servers, so not like BitTorrent or something like that.

10 Q. But you still agree it's a peer-to-peer system. Right?

11 A. Through the process, it would go from a peer to peer via
12 intermediary hosts.

12:51 13 Q. Okay. So, yes, you agree that it was a peer-to-peer
14 system?

15 A. I'm having trouble because my own definition for
16 peer-to-peer is more like they talk directly.

17 Q. Well, it wouldn't make sense to describe the FCM system
18 that way, would it?

19 A. No.

20 Q. And peer-to-peer means that two different entities such
21 as two different people in a chat can share information with
22 each other, including through some common connection.

12:52 23 Correct?

24 A. Sure, yes.

25 Q. And Google itself described the GtalkService as a

1 convenient way for phones to just notify each other when
2 they're online and available for message passing, didn't they?

3 A. I don't remember that. Could you show us where that was?

4 Q. Sure. I believe you used this document on your direct
5 examination.

12:52 6 MR. MIRZAIE: If we could pull up JX 9 at page 128.

7 Q. (BY MR. MIRZAIE) Do you recall this part of JX 9, sir?

8 A. Yes, I do.

9 Q. And this describes the GtalkService as an alternative to
10 SMS. Right?

11 A. Right.

12 Q. And SMS is just simple text messaging, isn't it?

13 A. Yeah.

12:53 14 Q. And it also describes Gtalk as a peer-to-peer message
15 passing system all the way at the bottom, doesn't it, sir?

16 A. Yes.

17 Q. And, again, just for -- strike that.

18 And it would not make sense to call the accused FCM
19 system a peer-to-peer system, would it?

20 A. I do believe they do in this doc.

12:53 21 Q. Sir, do you see the words FCM in that doc?

22 A. I see GtalkService there.

23 Q. Yeah. That's your testimony earlier, that it was just a
24 simple name change. Right?

25 A. Yeah.

1 Q. We'll get to that in a moment. But the accused FCM
2 systems today that are at issue for infringement in this case,
3 those are not peer-to-peer. Fair?

4 A. Nor was GtalkService.

5 Q. Okay. Now, you would agree -- strike that.

12:54

6 Are you familiar with the concept of light tickles, sir?
7 In the context of the GtalkService, I should say.

8 A. Yeah, light tickles mean that we were sending an empty
9 message.

10 Q. Right. And in Gtalk for the syncing of PIM apps, there
11 would be light tickles that had no payload. Right?

12 A. Yes.

13 Q. And then the app would go fetch the payload. Right?

14 A. Correct.

12:54

15 Q. Now, you'd agree that a message with no payload, that
16 couldn't include an advertisement or a transaction
17 notification if it had no payload. Right?

18 A. The lack of payload is just a signal that you need to
19 talk to your server. It's like knocking on the door and
20 walking away.

21 Q. So it wouldn't include the payload for any actual
22 advertisement or other notification message, would it, sir?

12:55

23 A. Correct.

24 MR. MIRZAIE: If we can go to slide 6, Mr. Mahon.

25 Q. (BY MR. MIRZAIE) So I think, just based on the

1 differences we just discussed, you'd agree that the accused
2 FCM system at issue this week is not peer-to-peer, it uses
3 setPackage, and package names in an FCM registration system,
12:55 4 and a registration ID, and has a GC module per our discussion
5 today. Correct?

6 A. I think that those items, that it's my view of not
7 peer-to-peer; similar to GtalkService, that it has -- uses
8 setPackage, yeah.

9 Q. And I think we just confirmed in the last five minutes
10 that the prior art Gtalk before 2009 did not have -- were
11 different in the ways that I show in this screen. Correct?

12 A. No. I disagree with the peer-to-peer there.

13 Q. Okay.

12:56 14 A. In my view, GtalkService still used servers in that.

15 Q. But it was not open to third parties. That's a typo on
16 this screen. It did not have the interfaces we just
17 discussed. Correct?

18 A. The original GtalkService did not have access for third
19 parties.

20 Q. Despite that, despite all these differences, I think you
21 just referred, and it's been referred to this week, as a
22 simple name change, all the way from the September 2008
23 product all the way to the FCM product today. Didn't you
24 refer to it that way?

12:57 25 A. Yes.

1 Q. But you'd agree that tons of functionality, including the
2 ones we see on this screen, were added over the years. Right?

3 A. No. I said functionality was added, but the core
4 components were the same.

5 Q. And I believe you said, sir, that the prior art product
6 in 2009 was a prior version of FCM. Do you recall that on
12:57 7 your direct examination?

8 A. No, but I may have said that.

9 Q. But, in fact, sir, what does the F in FCM stand for, sir?

10 A. Firebase.

11 Q. Firebase was a company that Google acquired in 2014,
12 wasn't it?

13 A. Correct.

14 Q. That was -- that entire company that merged with Google
15 wasn't Google's before 2014, was it?

16 A. No.

12:58 17 Q. The Firebase in Firebase Cloud Messaging comes from that
18 merger, does it not?

19 A. The prefix of Firebase going from Google Cloud Messaging
20 to Firebase Cloud Messaging comes from that merger, yes.

21 Q. And I appreciate that your testimony on direct
22 examination was that the core product's the same, but at least
12:58 23 the differences on this screen did exist from 2008 to today.
24 Correct?

25 A. No. I've said before I disagree with some of these

1 elements.

2 Q. Okay. And so you're not saying, sir, that the product
3 from 18 years ago could just be used today in the exact same
4 format, are you?

5 A. No.

12:58

6 Q. Okay. Now that the product since C2DM was opened up to
7 third parties, that created a lot of benefits for Google.
8 Correct?

9 A. It benefited the Android ecosystem.

12:59

10 Q. And it led to some desirable business opportunities with
11 non-Google entities such as Samsung. Correct?

12 A. I'm not aware of those. I'm an engineer. I work on the
13 product.

14 Q. But you have seen a document entitled Mobile Application
15 Distribution Agreement. Correct?

16 A. I don't recall. Was that during the deposition?

17 Q. Yes, sir.

18 MR. YANG: Objection, Your Honor. Can I approach?

19 THE COURT: Approach the bench.

20 (The following was had outside the hearing of the
21 jury.)

01:00

22 MR. MIRZAIE: I'll move on. I don't want to waste
23 time. I can move on.

24 THE COURT: If there's not a live objection, let's
25 move on.

1 MR. YANG: Thank you, Your Honor.

2 (The following was had in the presence and hearing
3 of the jury.)

4 THE COURT: Let's continue.

5 MR. MIRZAIE: Thank you, Your Honor.

6 Q. (BY MR. MIRZAIE) And just piggybacking on your last
01:00 7 answer, sir, you didn't discuss that -- any agreements with
8 Samsung on your direct examination. Correct?

9 A. I thought there were some questions, but I don't remember
10 the details at all.

11 Q. Now, you know that this week it's Headwater's contention
12 that a benefit of using the FCM push notification service is
13 that it provided the ability to enable messages to be sent
01:00 14 downstream the moment they arrive so apps don't have to pull
15 and check every five or 15 minutes. Do you understand that?

16 A. Yes, I understand that.

17 Q. And Samsung suggested all week that that's not the case,
18 that it didn't provide that benefit or ability. Do you
19 understand that?

20 A. I don't know what Samsung's argument was there.

21 Q. But you'll admit, sir, won't you, that FCM push
22 notifications do provide the ability for messages to be sent
01:01 23 downstream the moment they arrive so apps don't have to pull
24 and check every five or 15 minutes. Right?

25 A. Yes.

1 Q. And the benefit that ability provided is precisely what
2 Mr. Ghosh, who you mentioned on your direct examination,
3 another manager at Google, showed a roomful of developers
4 after 2010, wasn't it?

5 A. He showed the battery benefits of using an aggregated
6 persistent connection.

01:01 7 MR. MIRZAIE: And if we could go to PTX 91 at slide
8 7.

9 Q. (BY MR. MIRZAIE) And this is the impact on polling that
10 he showed. Correct?

11 A. That is the study that he showed.

12 Q. And although you don't know the intricate details of the
13 test or any of the details of the test, you'd agree that the
01:02 14 slide shows the impact of polling as was measured by their
15 test. Right?

16 A. On the device that they used with the software on the
17 device at that time of day, it was a measurement of that
18 benefit, yeah.

19 Q. And there's a five-minute frequency and a 15-minute
20 frequency shown right here on the screen. Right?

21 A. Yep.

22 Q. So any suggestion that Google didn't test the very
01:02 23 benefit we described a moment ago before this lawsuit was
24 filed would be wrong. Right? Sending downstream every five
25 or 15 minutes so the apps didn't have to fetch. Correct?

1 A. Yeah. Could you state the question because I wasn't
2 quite sure what I'd be saying yes or no to.

3 Q. I'll just move on so we can streamline this.

4 Sir, Google has no stated plans to discontinue the entire
5 FCM service. Right?

01:03 6 A. I have not heard of any plans to remove FCM.

7 Q. Okay. And the break during lunch gave us an opportunity
8 to I think pull up the video--the system's working now--that
9 we mentioned earlier today. And while that's being teed up,
10 sir --

11 A. Thank you.

12 Q. -- you're familiar with the Firebase YouTube channel,
13 aren't you?

14 A. Yes.

01:03 15 Q. And you're familiar with a video that you posted in 2020
16 along with another engineer at Firebase. Correct?

17 A. Yeah.

18 Q. And this is a talk you gave over that video entitled,
19 "Engage your users with Firebase messaging." Right?

20 A. Yes.

01:04 21 Q. And in that video at minute 12:02 to 12:23, you refer to
22 the FCM server, singular, handling -- fanning out messages.
23 Correct?

24 A. I'd love to hear it, but it's possible. That was a
25 really tough video. I think we had more than 10 takes, and I

1 didn't get involved in the editing of it. I probably had
2 intended to say the FCM service and I had said server, being
3 nervous.

01:04

4 Q. So after 10 takes you said, you referred to the FCM
5 server, singular, handling the fanning out of messages to each
6 subscriber for you in the FCM system. Right, sir?

7 A. I would like to hear it, if it said service or servers
8 and was mistranslated --

9 Q. Sure.

10 A. -- but it's possible.

11 Q. No problem, sir. We can play it.

12 (Unidentified video was played.)

01:05

13 Q. (BY MR. MIRZAIE) Will you agree now that you used FCM
14 server to describe the system that handles fanning out
15 messages to each of the subscribers, sir?

16 A. Yes.

17 Q. Thank you.

18 MR. MIRZAIE: Pass the witness.

19 THE COURT: All right. Is there redirect, Mr. Yang?

20 MR. YANG: Yes, Your Honor.

21 THE COURT: Are you going to use this board during
22 your redirect?

23 MR. YANG: Not this one, but potentially another
24 one.

25 THE COURT: All right.

1 MR. YANG: Do you want me to put it up now?

2 THE COURT: If you're going to use it, go ahead and
3 put it up now.

01:05 4 MR. YANG: Thank you.

5 THE COURT: All right. Let's proceed with redirect.

6 REDIRECT EXAMINATION

7 BY MR. YANG:

8 Q. Mr. Hansen, the video you just saw, it said the FCM
9 server fans out the messages to the phones. Which set of
01:06 10 servers fans out the messages to the phones?

11 A. That would have been the DMB servers or the session
12 servers that we talked about. Oh, sorry about that. That
13 would be the data messaging backend servers or the session
14 servers as we talked about earlier.

15 THE COURT: Slow down, Mr. Hansen. Okay? We've had
16 lunch, had plenty of time for you to get used to the witness
17 stand. Slow down. And please, if the answer calls for an
18 affirmative response, yes is the best one, not yeah or yep or
01:06 19 any of the other words you've used.

20 THE WITNESS: Yes, sir.

21 THE COURT: This is not a conversation on the street
22 corner. This is an examination in a United States District
23 Court, and there is a certain amount of accuracy and formality
24 that's called for. So -- but most of all, please slow down
25 because you are wasting everybody's time if nobody, including

1 the court reporter, can understand you. All right?

2 THE WITNESS: Yes, sir.

3 THE COURT: All right, Mr. Yang. Please continue.

4 MR. YANG: Thank you, Your Honor.

01:07

5 Q. (BY MR. YANG) Let me just restate the question. So in
6 FCM, the mobile connection server is the one that connects to
7 the Android phones. Correct?

8 A. Correct.

9 MR. MIRZAIE: Objection, Your Honor; leading.

10 THE COURT: Sustained.

11 MR. YANG: I'll rephrase, Your Honor.

12 Q. (BY MR. YANG) Which server -- which set of servers is
13 dedicated to fanning out the messages to the phones, each
14 individual Android device?

01:08

15 A. So the mobile connection server is responsible for
16 delivering the message to the individual devices. When it
17 comes to fanning out, like in the video where we're talking
18 about topic fanout, it would have been the data messaging
19 backend server.

20 Q. Exactly. So when that video refers to fanning out the
21 messages, which server is that referring to?

22 A. That would refer to the data messaging backend server.

01:08

23 Q. Okay. Now, I want to clear something up a little bit.
24 There was reference to Gtalk and then GtalkServices when
25 counsel was asking you questions. Do you remember that?

1 A. Yes.

2 Q. Now, in 2005, was there a Gtalk infrastructure for P2P
3 chat messages on desktops?

4 A. Yes, using going through the server.

5 Q. And that Gtalk system, that's a different system than
6 GtalkServices. Correct?

7 A. Correct.

01:09 8 Q. GtalkServices, that sent push messages to Android devices
9 and multiple apps on those devices. Correct?

10 MR. MIRZAIE: Your Honor, objection; leading.

11 MR. YANG: I can rephrase it, Your Honor.

12 THE COURT: You'll need to rephrase it. Ask your
13 questions in a non-leading fashion, please.

14 MR. YANG: Sure, will do, Your Honor. Sorry about
15 that.

16 THE COURT: All right.

17 Q. (BY MR. YANG) GtalkServices, was that a P2P system?

01:09 18 A. I don't view GtalkServices as a P2P system because the
19 app server has to send the message to the FCM session servers.

20 Q. Okay. Now, tell counsel asked you questions about this
21 thing called intent hijacking. Do you understand that? Do
22 you remember that?

23 A. Yes.

24 Q. Now, is that the situation where a bad actor could get a
25 message that wasn't intended to be sent to that bad actor?

01:10 1 A. Yes.

2 Q. Okay. Now, in GtalkServices, are you aware of any phone
3 that actually hijacked a push message that was sent over
4 GtalkServices?

5 A. I'm not aware of any apps that did that myself.

01:10 6 Q. Okay. Now, we talked about setPackage and what that did
7 for this hijacking issue. Now, even after using setPackage,
8 did that completely solve the issue of bad actors getting
9 messages they weren't supposed to get?

10 A. No.

11 Q. How do you know that?

12 A. Because we have examples of apps using the package name
13 and sender ID of a different app and being installed via side
14 loading or other ways.

01:10 15 Q. Okay. Now, just to be clear, was this issue that was
16 discussed related to implicit intents, was that a road block
17 to opening up GtalkService to non-Google developers in 2010?

18 A. No. The setPackage solution didn't come until a year
19 later, so we opened up before this setPackage was available.

20 Q. Do you recall counsel asking you questions about package
21 names and action names?

01:11 22 A. Yes.

23 MR. YANG: Can we pull up JX 9 at 39? And can we
24 zoom in on the action name section here?

25 Q. (BY MR. YANG) Mr. Hansen, this is intent documentation

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01:11 1 for developers from that same developer webpage we looked at
2 earlier from 2007. What is this saying about what you could
3 do with action names?

4 A. It's allowing the developer, the app developer, to
5 specify the action name and it's recommending that they use
6 the vendor's -- or the app's package name.

7 Q. Okay. So with action names, you could have actions that
8 go to multiple apps, but you could also have application
9 specific action names. Is that correct?

10 A. Yes.

01:12 11 Q. Now, this was true for GtalkService -- was it true for
12 GtalkService?

13 A. Yes, this was true for GtalkService.

14 Q. And does this functionality here, is that reflected in
15 the code that's in JX 72 in front of you?

16 A. Yes, I believe it is.

17 Q. Do you recall being asked on cross examine about control
18 messages sent over the persistent connection?

19 A. Yes, I do.

01:13 20 Q. Now, does FCM have the capability of controlling what
21 goes on inside an application?

22 A. No. We just deliver the message.

23 Q. All right. Do you recall being asked about comparing
24 these two architectures we see on this board here?

25 A. Yes.

01:13 1 Q. So on the left-hand side, that centralized server
2 architecture, let's say you had multiple centralized servers
3 where each of them connected to the app server on the left and
4 the phone on the right. Okay? So there are many of them, but
5 each one of them has to do both functions. Okay? Is that
6 what FCM does?

7 A. No.

8 Q. Okay. Now, would FCM have been able to scale to over a
9 billion Android devices if it had used the centralized
01:13 10 architecture on the left-hand side?

11 A. No, we wouldn't have been able to.

12 Q. Okay. Finally, you were asked about power savings and
13 you were shown a figure from Mr. Ghosh's presentation in 2010?

14 A. Yes.

15 MR. YANG: Can we pull up PTX 91? Can we go to that
01:14 16 figure? I think it's on page 9. Maybe somewhere around
01:14 17 there, the graph. It will be before this. This one. Thank
18 you.

19 Q. (BY MR. YANG) Now, the power savings that Mr. Ghosh was
20 talking about for C2DM, would that have been the same savings
21 using GtalkService?

22 A. Yes.

23 Q. Would it surprise you to know that Mr. Ghosh, when he was
24 giving this presentation, actually said that C2DM uses the
01:15 25 same persistent connection that Google had already been using

1 for its own apps?

2 MR. MIRZAIE: Your Honor, objection; leading and
3 also hearsay.

4 THE COURT: I'll sustain as to leading.

5 MR. YANG: Thank you, Your Honor. No more questions
6 for the witness.

7 THE COURT: You pass the witness, counsel?

8 MR. YANG: I pass the witness.

9 THE COURT: Is there further cross examination?

10 MR. MIRZAIE: No, Your Honor.

11 THE WITNESS: Thank you.

12 THE COURT: You may step down, Mr. Hansen. And
01:15 13 whoever owns these boards needs to clear them away.

14 MR. YANG: May Mr. Hansen be excused, Your Honor?

15 THE COURT: Yes, Mr. Hansen is excused. He's free
16 to stay; he is also free to leave.

17 MR. YANG: Thank you, Your Honor.

18 THE COURT: All right. Defendants, call your next
19 witness, please.

20 MR. REGER: Your Honor, may I approach?

01:16 21 THE COURT: Call your next witness, please.

22 MR. REGER: Thank you.

23 MR. THOMPSON: Defendants call Dr. Ian Foster.

24 THE COURT: All right. Dr. Foster, come forward and
25 be sworn, please.

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1 And, yes, Mr. Reger, you may now approach.

2 MR. REGER: Thank you.

01:17 3 (Whereupon, the oath was administered by the Clerk.)

4 THE COURT: All right, sir. Please come around and
01:17 5 have a seat on the witness stand.

6 All right. Mr. Thompson, you may proceed with direct
7 examination.

8 MR. THOMPSON: Thank you, Your Honor.

9 IAN FOSTER, Ph.D.,

10 having been first duly sworn, testified under oath as follows:

11 DIRECT EXAMINATION

12 BY MR. THOMPSON:

13 Q. Good afternoon, ladies and gentlemen, and Dr. Foster.

14 Dr. Foster, could you please start by introducing
15 yourself and what is your role here today?

16 A. Yeah. My name's Ian Foster, and I'm here as an expert
17 witness.

18 Q. Could you please tell us a little bit about your
19 background?

01:17 20 A. Yes. So I was born in New Zealand. I lived there for 21
21 years, and then for the last 35 years I've been living in
22 Chicago, the United States, where I live with my wife and two
23 children.

24 Q. Dr. Foster, have you created some slides to aid your
25 testimony here today?

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1 A. I have, yes.

2 MR. THOMPSON: Mr. Andryszak, could we brings up DDX
01:18 3 3? Can I borrow a clicker, please? Thank you.

4 Q. (BY MR. THOMPSON) Dr. Foster, can you start by telling
5 us what is your primary assignment in this case?

6 A. Yeah. I was asked to analyze the two accused push
7 messaging systems to determine whether either of them
8 infringes the two asserted patents.

9 Q. And can you tell us a little bit about your educational
10 and professional experience?

01:18 11 A. Yeah. I'm a computer scientist, so I study the science
12 of computers. I had an undergraduate degree at the University
13 of Canterbury in New Zealand, a Ph.D. at Imperial College in
14 London, and then subsequent to that I moved to Chicago, as I
15 said, where I worked at the University of Chicago and Argonne
16 National Lab.

17 Q. And what is Argonne National Lab?

18 A. It's a Department of Energy research lab. So we conduct
01:19 19 applied research in computing, particularly as it relates to
20 supporting scientific research.

21 Q. Can you describe for us some of the types of research
22 that you and your team have done at Argonne Labs?

23 A. Yes. So actually my team spans the university and
24 Argonne, and we're interested in general in how to connect
25 large numbers of computers and storage systems so that they

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1 can be used to tackle challenging scientific problems.

01:20

2 Q. And have you received any awards or recognition for your
3 work in the engineering field?

4 A. I have been fortunate to be recognized. Here is a
5 partial list. I will just mention a couple. The IEEE
6 Internet Award was for work on large-scale distributed
7 computing. And then in 2011, the Kanai Award was for
8 contributions to distributed computing.

01:20

9 Q. And I almost neglected to mention: Were there some Nobel
10 prizes awarded as a result of some of the work that your team
11 has done at Argonne?

12 A. Well, emphasize, I didn't get a Nobel prize. We built --
13 I'm an engineer essentially, and we built systems that
14 analyzed very large amounts of data from scientific
15 experiments that allowed the scientists to -- who produced
16 that data to obtain Nobel prizes.

01:20

17 Q. Now, my colleague Mr. McKeon referred to you in his
18 opening statement as the father of grid computing. Have you
19 heard that nickname you've been given?

20 A. I have, yes.

21 Q. And what is grid computing?

22 A. Well, grid computing, it's a term that refers to the
23 use -- the coupling and use of large numbers of computers
24 distributed across the country or sometimes internationally,
25 sort of a precursor to cloud computing.

1 Q. And is there a reason why folks in the industry have
2 called you the father of grid computing?

01:21 3 A. Well, it's -- I was very involved in early work in that
4 area, establishing a community of people working there and
5 building software or at least designing software that was
6 widely used for grid computing.

7 Q. Have you published any academic or peer-reviewed articles
8 related to distributed network communications?

9 A. Yeah. I published many papers in distributed computing,
10 computer networking, high performance computing, and related
11 topics.

01:21 12 Q. Maybe hundreds of papers. Is that fair?

13 A. Yes.

14 Q. And, Dr. Foster, do you yourself have any patents?

15 A. I do not, no.

16 Q. And is that because you've never come up with any good
17 ideas?

18 A. No. I think we have lots of good ideas, but at least,
19 you know, in the part of computing that I work in, the way we
20 choose to propagate our ideas is to produce freely available
21 software that we then distribute freely within the sciences
22 and sometimes more broadly.

01:22 23 Q. Were you familiar with the Android operating system
24 before you started your work on this case?

25 A. Yes.

1 Q. And how is that?

2 A. Well, I've, of course, read about it. I've taught
3 classes at the University of Chicago. I teach, you know,
4 regularly there, that have covered aspects of Android
5 operating system.

6 Q. Through your work as an educator and a research
7 scientist, have you also had exposure to push messaging?

8 A. I have, yes.

9 Q. And when was your first exposure to push technology?

01:22 10 A. I would say it would be in the mid 1980s.

11 Q. Taking all of your technical experience into account,
12 about how long have you been working in the field of
13 engineering?

14 A. Well, I finished my Ph.D. in 1989, sorry, '88, so
15 that's about 35 years.

16 MR. THOMPSON: Your Honor, I'd like to tender
17 Dr. Foster as an expert in the fields of distributed computing
18 and communication networks.

19 THE COURT: Is there any objection?

20 MR. FENSTER: There is not, Your Honor.

21 THE COURT: Without objection, the Court will
01:23 22 recognize this witness as an expert in those designated
23 fields. Please continue, counsel.

24 MR. THOMPSON: Thank you, Your Honor.

25 Q. (BY MR. THOMPSON) Outside of your work as a professor

1 and your engineering research, have you ever served as a
2 technical expert on a case like this one?

3 A. Yes, I have, yes.

4 Q. Okay. About how many times?

5 A. Over the years, I think I've been involved, you know, in
6 various regards in about 20 cases. I've appeared in court
7 like this on two previous occasions.

01:23 8 Q. Okay. So is serving as an expert witness something you
9 spend a lot of your time on during the year?

10 A. Well, when I was trying to work that out. I'd say, in
11 general, it's probably a week or two a year. This year seems
12 to be slightly more because of this case, but in general a
13 week or two.

14 Q. Given that you don't work on legal cases very often, how
15 do you determine whether to accept or decline such an offer?

16 A. Well, you know, when people approach me with an
01:24 17 invitation to be an expert witness, I will look at the case,
18 study the patents, you know, try and see what I can learn
19 about the people involved, and then I take it if I
20 think -- well, first of all, if it's interesting and,
21 secondly, if I think, you know, if I believe in the case being
22 made.

23 Q. Dr. Foster, returning to your analysis, what are some of
24 the materials that you reviewed as part of your work in this
25 case?

01:24 1 A. Yes. So I was provided with actually huge amounts of
2 information, but the patents, a lot of related materials,
3 expert reports by various people involved in the case, and
4 then various collections of source code and technical
5 documents.

01:25 6 And then, finally, I was able to review sworn testimony
7 by a Google engineer, some Samsung engineers, and the
8 inventor, Dr. Raleigh. When I say the Google engineer, I
9 meant Mr. Hansen, actually.

10 Q. And roughly how many hours would you say you spent
11 analyzing the materials and putting together your written
12 reports in this case?

13 A. You know, I didn't add it up but several hundred hours.

14 Q. Do you recall about how many pages of reports you ended
15 up submitting?

16 A. It's around about a thousand pages.

17 Q. Now, based on your analysis, did you reach a conclusion
18 on the primary issue you were asked to address?

01:25 19 A. I did. You know, my conclusion was that the two accused
20 push messaging systems on Samsung devices do not infringe the
21 two asserted Headwater patents.

22 Q. Now, Dr. Foster, can we start by discussing some of the
23 background related to the technology in this case?

24 A. Of course.

25 Q. Okay. Can you tell us a little bit about what was going

1 on in the relevant industry during the time leading up to the
2 inventions in this case?

01:26 3 A. Yeah. Well, you know, prior to 2007, of course, we had
4 some cell phones, but they were fairly primitive devices,
5 primarily used for phone calls.

6 On some of them, you could do some limited web browsing
7 and you could also send messages, but it was expensive. I
8 don't remember exactly how much, but it seemed like it's
9 expensive as sending a postcard to send a message.

10 Q. Meaning that we used to get charged on a per-text basis?

11 A. That's right, yes.

01:26 12 Q. Now, what happened in the 2007-2008 time frame that
13 changed the way we use our cell phones?

14 A. It was the emergence of smartphones, first the iPhone and
15 then Android devices, that really transformed things.

16 Q. And were there new features added that had new ways to
17 use the network on those phones?

18 A. Yes. So, you know, what made the smartphones exciting
19 was you could message people quickly, you could send emails,
01:27 20 you could share videos, you could navigate with maps, you
21 could download music, and many other things.

22 Q. Now, Dr. Foster, were these changes in the cellular
23 network happening around the time Headwater filed its 2009
24 provisional patent application?

25 A. You know, they happened somewhat before. This was

1 2007-2008, and then in 2009, as we've heard, Headwater filed
01:27 2 its provisional application.

3 Q. And can you remind us how the provisional application
4 filed in 2009 relates to the two asserted patents in this
5 case?

6 A. Yes. So the two asserted patents, you know, were filed
7 subsequently, you know, 2012 and 2015.

8 Q. Now, did the Headwater patents acknowledge the increase
9 in mobile network usage?

01:28 10 A. Yes. So, you know, the patents makes -- I thought made
11 some very good points about the, you know, increased demand on
12 networks resulting from these new applications that were being
13 deployed, thanks to these new smartphone systems.

14 Q. And what did the Headwater patent acknowledge about the
15 consequences that could relate to that increased network usage
16 by smartphone apps?

17 A. Well, they argued that these new high bandwidth
01:28 18 applications, you know, like from mail to video streaming were
19 going to consume a lot of bandwidth and it was therefore a
20 risk of both degrading performance for the consumers, the
21 users of those networks and also, you know, a danger of
22 decreasing the profits obtained by the service providers.

23 Q. Okay. And can you explain what you mean by that by
24 looking at this depiction on slide 16?

01:29 25 A. Well, you know, for this picture I drew -- I tried to use

1 the red color to indicate that the network is in trouble
2 because there are so many network -- so many applications
3 trying to move data across it.

4 Q. And does that relate at all to something that we might
5 experience at times in our own lives?

6 A. Yes. So imagine a lot more people driving and without
7 adding roads to the road system.

01:29 8 Q. Now, we've heard from Headwater that it attempted to
9 solve this problem by introducing a new, efficient way to push
10 messages. Have you heard some of that testimony?

11 A. I have, yes.

12 Q. Was that a solution actually proposed by these patents?

13 A. No, it was not.

14 Q. And have you seen anything in the patent specification
15 describing innovations to push messaging?

16 A. I have not, no.

01:30 17 Q. So what do the patents actually say to do about this
18 wireless net work traffic issue?

19 A. Well, I thought they had some good ideas of how to
20 address it, and they sort of fell into two buckets. They said
21 we can charge people more for communications so that to
22 discourage I guess usage or we can control what they're able
23 to do with the devices.

24 Q. And which of those aspects are we seeing here on slide
25 18?

1 A. Yes. So this is talking about billing, saying,
2 let's -- we should be billing people for their usage of
3 various applications.

01:31 4 Q. Okay. And do we see here examples of billing for email
5 service and billing for web browsing?

6 A. That's right, yes.

7 Q. How do the patents propose that this billing should be
8 accomplished?

9 A. Yes. So in order to bill, you need to be able to know
10 what people are doing. And so they proposed deploying
11 monitoring capabilities on the devices that would log usage
12 and do that at the level of individual applications.

01:31 13 Q. And what sorts of application activities did the patents
14 say could be logged and later billed to the user?

15 A. Well, they gave a few examples, you know, as noted on the
16 screen here. One was measuring the number of messages sent
17 and received, the number of files downloaded, how long an
18 application had been running.

01:31 19 Q. Can you help us understand how the billing proposal in
20 the patent might have related to the types of applications
21 that we use today?

22 A. Yeah. So I should have illustrated a couple of examples
23 here. So, you know, in the case of mail application, they
24 might track the number of messages you are downloading and
25 uploading or, sorry, the number of attachments sent and upload

1 that to the carrier.

2 And for, say, if you're using a social networking app
3 like Facebook, it might record the number of messages that you
4 sent and the number of videos that you watched.

01:32 5 Q. And then how would a service provider like Verizon profit
6 from that activity?

7 A. Well, presumably they could, you know, charge on the
8 amount of various different activities that you performed.

9 Q. And are you aware of any service providers currently
10 charging on a Facebook message basis?

11 A. That's not my area of expertise, but I'm not aware of any
12 such activities.

01:33 13 Q. Other than billing for how applications work, what else
14 did the Headwater patents propose to control how much network
15 service was used by an application?

16 A. Yeah. So the other, you know, major thing that was
17 proposed in the patents was to allow for control by the
18 service provider over what was being done on the device.

01:33 19 So you might, for example, if usage was excessive or load
20 was excessive, want to throttle the amount of activity of a
21 certain sort that was performed by a particular device.

22 THE COURT: Dr. Foster, pull the microphone a little
23 closer.

24 THE WITNESS: Apologies. All right.

25 THE COURT: It's all right.

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1 Go ahead, counsel.

2 Q. (BY MR. THOMPSON) And so did the patents tell us that
3 the provider could actually control the services that were
4 allowed on your phone?

5 A. Yeah, that's right. So it talks about throttling,
6 blocking, or otherwise controlled, yeah.

01:34 7 Q. And why would that have been helpful to approach this
8 overusage of the network?

9 A. Well, if you -- it's like with a highway. If you have
10 too much traffic, well, you can, you know, restrict access to
11 the highway so that the number of cars on it doesn't become
12 excessive.

13 Q. And did the patent describe a particular link that could
14 be used to accomplish these billing and control aspects?

01:34 15 A. Yes. So this is where the service control link comes in,
16 the device -- a particular communication channel designed to
17 communicate these control messages from the service provider
18 to the devices.

19 Q. And do we see that service control link that appears in
20 pink on your slide showing the patent figure 16?

01:34 21 A. Yeah. I show that here in pink, yes.

22 Q. And is service control link one of the claim terms in the
23 '733 Patent that's being asserted in this case?

24 A. No, I don't think it appears there. Yeah.

25 Q. We see some agents here on the left-hand side of the

1 figure. What are those agents there for?

01:35

2 A. Yeah. So the agents are things that we can see here, a
3 billing agent. What else can I see? A policy control agent.
4 I mean, I view these as being the entities designed to in the
5 one case keep track of billing and in the other case
6 keep -- enforce policies governing what the phone is allowed
7 to do at a particular point in time.

01:36

8 Q. And I apologize. I might have misspoke. You agree that
9 service control link is one of the claim terms in the '733
10 Patent. Correct?

11 A. I get these patents mixed up. Excuse me. Yes, that's
12 right.

13 Q. Now, did figure 16 in the patent also separately show a
14 conventional internet connection?

15 A. It does, yes.

16 Q. And where do we see that?

01:36

17 A. Well, this is -- I've highlighted that here in green.
18 It's, you know, depicted as being the internet connection.

19 Q. Now, how did the patent describe this secure -- this
20 service control link?

21 A. Well, it describes it, you know, uses two adjectives. It
22 says it's unique and -- and secure. So it's a unique secure
23 communication link from the service provider to the device.

01:36

24 Q. Now, can you give us an example as to how the patented
25 technology would have used this service control link to

1 control an application?

2 A. Yeah. So, for example, you might have Facebook running
3 on your device. You're using it for a variety of
4 purposes--posting pictures, browsing profiles, and streaming
5 videos. If usage was excessive, then a control message could
6 be sent down the service control link to disable video
7 streaming from your Facebook application.

01:37 8 Q. You read the patents-at-issue in this case. Correct?

9 A. I did, yes.

10 Q. And when you read the patents-at-issue in this case, did
11 you come away thinking that there were any advances disclosed
12 concerning secure aggregated push messaging?

13 A. I did not, no.

14 Q. What are the accused Samsung devices, Dr. Foster?

15 A. Yeah. So the Samsung devices are, as I sort of show
01:37 16 here, phones -- and I guess I show a phone. Phones and
17 tablets, and phones and tablets that specifically run the
18 Android operating system developed by Google.

19 Q. We've heard a lot about this, but can you remind us what
20 this Android operating system is?

21 A. Yeah. So an operating system is a software that runs on
22 a computer to allow applications to run. The Android
23 operating system is an operation system developed by Google to
24 support the use of mobile devices.

01:38 25 Q. And is the Android operating system unique to Samsung

1 devices?

2 A. No. It's used by many -- well, it's run on hardware
3 developed by many vendors. So Motorola is one, Google
4 manufactures their own phones, and there are also other
5 vendors.

01:38

6 Q. Now, before we get into the specifics of the operation of
7 the technology, can you remind us again what are push
8 messages?

9 A. Okay, yes. So push messages are messages I think someone
10 else said that you didn't ask for, but, you know, they could
11 include -- it could be from the service provider saying it's
12 time to update your software, it could be a notification of an
13 email being available for you, or it could be an advertisement
14 of some sort.

15 Q. And, Dr. Foster, have you ever received a push message
16 that controlled your network service on your phone?

17 A. I have not, no.

01:39

18 Q. Are push messages a revolutionary new technology that's
19 unique to modern smartphones?

20 A. No. It's a very old technology.

21 Q. Have cell phones been receiving push messages well before
22 the Headwater patents?

01:39

23 A. Yes. So you know, initially they were delivered via
24 so-called SMS, short messaging system, communications.

25 Q. There are a couple of push systems at issue here. Can

1 you tell us a little bit about the Google push messaging
2 system that's accused in this case?

3 A. Yeah. And as we just heard from Mr. Hansen, you know,
4 it's currently called the Firebase Cloud Messaging system, but
5 it's -- you know, dates back to the -- to GtalkService. It's
6 gone through various versions over the years from 2008
01:40 7 forward, and it's basically provided by Google -- operated by
8 Google as essentially a free service that application
9 developers can use if they want to add the ability to their
10 apps to deliver messages.

11 Q. And is it your understanding that any of the millions of
12 application developers can use the FCM message delivery to
13 send messages to devices?

14 A. That's my understanding, yes.

01:40 15 Q. And this Google Firebase system was developed and
16 released by Google, not Samsung. Is that your understanding?

17 A. That is correct.

18 Q. Dr. Foster, do you know why Headwater is suing Samsung
19 for patent infringement --

20 A. I do not.

21 Q. -- based on Google's push messaging system?

22 A. No.

23 Q. When did Google first release its push messaging system?

01:41 24 A. In 2008.

25 Q. And is that the GtalkService messaging system we heard

1 Mr. Hansen speak about?

2 A. That's correct, yes.

3 Q. Now, does Headwater contend that all of the Google push
4 messaging systems all the way back to 2008 use the Headwater
5 technology?

6 A. No. It contends that only the three latter versions of
7 this push messaging system infringe the patented technology.

01:41 8 Q. Okay. And if Headwater was to say that the September
9 2008 version, the GtalkServices messaging version, used the
10 Headwater patents, what would be the consequences of that?

11 A. In that case you'd have an implementation of those -- of
12 the innovations in the patent that predated the patent and
13 therefore the patents would be invalid.

01:42 14 Q. Now, does this timeline show dates associated with the
15 Google push messaging system versions on the top and the
16 bottom dates associated with the patents and the lawsuit?

17 A. It does, yes.

18 Q. Okay. Can you tell me the significance of the July 2010
19 date we see down there?

20 A. Yeah. So you know my understanding is a patent can be
21 initially filed in a private sense, which is what happened in
22 January of 2009, and then it is published potentially at a
01:42 23 later date, in this case in July of 2010, in which -- at which
24 time it becomes publicly available.

25 Q. So is it correct that the GtalkService's version and the

1 C2DM version were released by Google before the Headwater
2 patents saw the light of day?

3 A. That's correct, yes.

4 Q. So just to be clear, there's no one arguing in this case
5 that you're aware of that's insinuating that Google somehow
6 developed this technology with the knowledge of Headwater's
7 patents. Is that correct?

01:43

8 A. Yes.

9 Q. And, Dr. Foster, had Google released the GtalkService
10 C2DM and GCM versions of its messaging platform before either
11 of the patents issued?

12 A. That's correct.

13 Q. Can you tell us a little bit about the Samsung Push
14 Platform?

01:43

15 A. Yeah. So the Samsung Push Platform, it's a very similar
16 system to the Firebase Cloud Messaging. It's a push platform
17 developed by Samsung which can be used to develop -- deliver
18 messages from applications to a Samsung phone -- phones and
19 other devices.

20 Q. And is the Samsung Push Platform still in use today in
21 the United States on the accused products?

22 A. It is not, no.

23 Q. And when was that service discontinued?

01:44

24 A. In 2020.

25 Q. So the Samsung system has been discontinued for five

1 years. Is that correct?

2 A. That's my understanding, yes.

3 Q. What do we see here on slide 40?

4 A. Well, I -- we see a timeline of Samsung Push Platform
5 technologies at the top and then, down below, the issue dates
01:44 6 for the two patents and, finally, on the far bottom right, the
7 time of the -- when Headwater sued Samsung.

8 Q. And so is it correct that the Samsung Push Platform was
9 introduced before either of the patents in this case were
10 issued?

11 A. That's correct.

12 Q. Can you identify for us what are the primary elements of
01:45 13 the Google push messaging system?

14 A. Yeah. They are shown on this slide colored in yellow.
15 So we have a set of external servers sometimes called
16 application servers, we've got the data messaging backend
17 servers, we've got the mobile connection servers, and the
18 Android devices.

19 Q. And to be clear, was Samsung responsible for developing
20 any of the Google messaging functionality in this diagram?

01:45 21 A. It was not.

22 Q. So would the accused Google messaging functionality
23 operate the same on any Android device as it does on Samsung's
24 device?

25 A. Yes.

1 Q. Can you tell us what are the general functionalities of
2 the backend server and the MCS server we see there?

01:46

3 A. Yes. So the -- you know, the applications want to
4 generate messages, so they -- the first step is they send
5 those messages to the backend servers which, you know, collect
6 them, and then the backend server sends then the request to
7 the connection server, the mobile connection server, the MCS,
8 to request that those messages be then forwarded on to the
9 mobile devices.

01:46

10 Q. Okay. Now, are we looking at a depiction from JX 52,
11 according to the designation there?

12 A. Yes, that's right.

13 Q. Now, do we see similar components in the Samsung system
14 that was discontinued?

15 A. We do.

16 Q. And can you show us what we're looking at, tell us what
17 we're looking at here?

01:47

18 A. Yeah. So it's a slightly different organization here,
19 but essentially the same four sets of components. We've got
20 application servers again, we've got request manager services
21 which corresponds to the database -- data management backend
22 service, we've got the connection manager -- management
23 service, and again the mobile devices.

24 Q. Now, we see in this diagram there's an indication that
25 says push notification server there at the top. Do you see

1 that?

2 A. I do.

3 Q. And does that mean there's only one server in that entire
4 area below it?

5 A. Of course not, no.

6 Q. Okay. And on the far left-hand side, it says push
7 client. Do you see that?

8 A. I do.

01:47 9 Q. Does that mean there's only one client in that box?

10 A. No, of course not.

11 Q. And does it actually say SPP client, client, client,
12 client multiple times?

13 A. It does, yes.

14 Q. On the far side, we see third app server. Do you see
15 that?

16 A. I do.

17 Q. And at least how many app servers are shown there?

18 A. Well, I see four followed by three dots.

01:48 19 Q. Does the figure here on slide 44 depict the overall
20 architecture of both of the accused push systems?

21 A. It does, yes.

22 Q. And we see a representation of a few servers on the left
23 and a few servers on the right, the request servers and the
24 connection servers. In the real world, would there be more
25 than three of those?

1 A. There would.

2 Q. And can you explain to us at a high level how a push
3 message would traverse these multiple servers?

01:48

4 A. Yeah. So an application like sort of what
5 an organization like, say, the weather service would want to
6 send a notification, maybe there's going to be a thunderstorm
7 in the near future, and so it will send -- ask -- first of
8 all, contact the application server. The application server
9 for the Weather Channel in this case will then send that
10 message that's to be sent to the request server.

01:49

11 The request server then decides, based on who the message
12 is going to be sent to, which connection server it should send
13 it on to, and then the connection server, assuming there's a
14 connection in place to the requested mobile device, will
15 forward that message on to the mobile device.

16 Q. And do we see here on slide 45 the type of push message
17 notification that we may have received on our own phones?

01:49

18 A. Yeah. So this is in this case notifying us of an
19 upcoming rainstorm, hopefully not.

20 Q. I think we already had one of those.

21 A. Yeah.

22 Q. Now, when the message arrives at the device, can you help
23 us understand what happens next, how is it routed to the right
24 application?

25 A. Yeah. So the message arrives at the device and is, you

1 know, received, and now we're -- it's in the hands of the
01:50 2 Android operating system which is running on whatever device
3 we're working with. So a push client is then engaged in
4 delivering the message to the appropriate application.

5 Q. Now, when the message first reaches a device, what are
6 some of the contents that are included in that message?

7 A. Well, two important ones: first of all, an application
8 identifier saying we want this message to go, for example, to
01:50 9 mail application or the Weather Channel; and then there's
10 the -- any contents that is to be included within the message.

11 Q. And did you review any Google documents or source code to
12 confirm your understanding of those message contents?

13 A. Yeah. So this is an example Google document. It's a
14 source code documentation, so it talks about the -- a couple
15 of things here. [REDACTED]

01:51 16 [REDACTED]
17 [REDACTED].

18 Q. And did Mr. Hansen tell us the package name is the name
19 of the application?

20 A. He did, yes.

21 Q. Did you also review any Samsung documents or code to
22 confirm your understanding?

23 A. I did, yes.

24 Q. And what do we see here?

25 A. Yes. So here we see some Samsung code highlighted as the

01:51 1 component that is extracting the application ID from the
2 incoming message.

3 Q. And is that at JX 71?

4 A. That's right, yes.

5 Q. Now that the message has arrived at the device and at the
6 client, how is it further delivered to the correct
7 application?

8 A. Yeah. So in -- once it's arrived at the device, it is
01:52 9 delivered to the applications via the use of this Android
10 communication mechanism called an intent. So the intent
11 mechanism is used to deliver the message to the particular
12 application.

13 Q. And in that case does this intent include the package
14 name we've heard so much about?

15 A. Yeah. So the package name is provided to say who the
16 message should go to and then the message content is also
17 included if such is available.

18 Q. And did you review Google documents to confirm that
01:53 19 understanding?

20 A. I did, yes.

21 Q. And what do we see here on slide 51?

22 A. Yeah. So here we see in the sort of the box on the lower
23 left, you know, the code, in yellow actually, yes. [REDACTED]
24 [REDACTED]
25 [REDACTED]

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1 [REDACTED].

01:53

2 Q. And did you confirm your understanding also looking at
3 Samsung source code?

4 A. Yes, I did. And here I show actually, again highlighted,
5 we're getting the application ID and then retrieving a package
6 name and then setting that in the intent.

01:53

7 Q. And so is it the case that both the Google system and the
8 discontinued Samsung push system, both of them routed the
9 messages to applications using an intent and a package name?

10 A. That's correct.

11 Q. And does Headwater's technical expert actually agree with
12 you on that?

13 A. I believe he does, yes.

14 Q. Now, what are intents in Android and broadcasted intents?

01:54

15 A. Yeah. So intents are the mechanisms used to communicate
16 within a device, and it's a very elegant and powerful system.
17 It allows you to specify who you want a particular message to
18 be delivered to. And this could be a set of applications,
19 which is sometimes useful, or you can specify a particular
20 application, in which case the message only goes to that named
21 application.

22 Q. And does this particular excerpt come from an Android
23 website at JX 62?

24 A. It does, yes, except it's JX 66.

25 Q. Oh, thank you. JX 66.

1 And are these intents in Android specific to only the
2 push messaging systems?

01:54

3 A. No. They're basically the -- it's everything Android
4 builds on this framework. It's how all communication between
5 components in the device is performed.

6 Q. Now, what is the significance of using a package name
7 associated with an intent to deliver a message?

01:55

8 A. Well, you know, the idea is that each application running
9 on your device will have a different package name, so if you
10 specify the application -- the package name -- sorry. If you
11 specify the package name in your intent, that message will
12 only go to that application.

13 Q. And in that case, does the application decide what to
14 further accomplish with that message?

15 A. Yes, that's right.

16 Q. And can you help us understand what that means by looking
17 at this depiction here?

01:55

18 A. Yeah. So say someone sends a message -- you might send a
19 message to the Spotify music application saying here's a new
20 song by the Rolling Stones, perhaps I'm showing my age with
21 this example, and then the Spotify music application will
22 receive that message and it will decide to do with it. It
23 might decide to play the song or save it to a playlist or just
24 display the album cover.

25 Q. And is there a delivery method in the real world that

1 might be an analog to that situation?

01:56 2 A. Oh, here's one I thought of. So it's sort of like
3 my -- your house is an application. I'm going to ship a
4 package to you. The package arrives at your house via FedEx,
5 and then you can choose what to do with the package.

6 Q. Does FedEx ever walk inside your house to control what
7 you're doing with the package after it's opened?

8 A. Fortunately they've never done that, no.

9 Q. Dr. Foster, can you remind us of what is your ultimate
10 opinion on the infringement issue in this case?

11 A. Yes. As I said earlier, my opinion is that Samsung does
01:57 12 not infringe Headwater's patents.

13 Q. And what is the general approach that yourself and
14 Headwater's technical expert would take when conducting an
15 infringement analysis?

16 A. You know, I believe we would have -- we followed a very
17 similar approach. First of all, review the patents and
18 related materials, make sure that I understand clearly the
01:57 19 meaning of the claim terms in the patents, and then go through
20 and compare each element of each claim to the accused system
21 that I'm considering, and then determine whether each claim
22 element is found in the accused system.

23 Q. Now, when you say each claim element, when the jury is
24 evaluating this case at the end, how many differences do they
25 need to find between the patent claims and the accused

1 products to say there's no infringement?

2 A. One is sufficient, yeah.

01:57

3 Q. Now, you mentioned a need to understand the meaning of
4 the claim terms. Has His Honor provided us with some guidance
5 on those meanings or has the Court provided us with guidance?

6 A. The Court has, yes, and I list them here. There are
7 really two for which proposed -- a construction is
8 defined--device agent and device messaging agent, which occur
9 in the '733 and the '117 Patent, respectively.

01:58

10 Q. And did you apply these claim constructions to the
11 entirety of your analysis?

12 A. I did, yes.

13 Q. Can you summarize at a high level the differences that
14 you found between the Headwater patent claims and the accused
15 push systems?

16 A. Yes. So I found two what I viewed as important
17 differences in which I list here, different architecture and a
18 different approach.

01:59

19 Q. Okay. Let's start with the first one. Can you remind us
20 of how the patent -- sorry. Let me back up there.

21 Where do we see this architecture show up in the '733
22 Patent claims?

23 A. Well, a key issue there is this service control link that
24 we've already heard about.

25 Q. Okay. And can you remind us of where that architecture

1 appears in the patent?

01:59

2 A. Yeah. So what occurs in this famous figure 16, you know,
3 where we see the service control link shown here in red and
4 then the general link shown in green.

5 Q. Is this service control link the link that the patent
6 referred to as being unique?

7 A. That's right.

8 Q. And is that the link that the patent said could be used
9 for billing and controlling your service?

10 A. That's correct, yes.

01:59

11 Q. Now, does Headwater, when it comes to the service control
12 link, point to the connection between our mobile devices and a
13 connection server?

14 A. That is correct, yes.

15 Q. And did that persistent connection exist in the
16 GtalkServices version before the patents?

17 A. It did, yes.

18 Q. Okay. So at the time the patents were being invented,
19 was that a unique connection of any sort?

20 A. It was not, no.

21 Q. Now, do the accused push systems send messages over a
22 link that controls your service?

23 A. They do not, no.

02:00

24 Q. So in your opinion, do the accused push systems have the
25 service control link required by the patent?

1 A. And here we're referring to the '733 Patent?

2 Q. Correct.

3 A. And they do not, no.

4 Q. So does that mean that there can be no infringement of
5 the '733 Patent based on this difference alone?

6 A. That is correct.

02:00 7 Q. Okay. Can you tell us where this architecture shows up
8 in the claims of the '117 Patent?

9 A. Yes. So an important architectural difference in my view
10 in the context of the '117 Patent relates to this network
11 message server that is described in that patent.

12 Q. Okay. And so do the claims tell us that we have a
13 network message server and that server has to receive the
02:01 14 request, generate data messages, and transmit data messages?

15 A. Yes, that's correct.

16 Q. And according to the inventor, is the network message,
17 the network message server the one depicted in 1638 of his
18 figure 16?

19 A. Yes. So that's the yellow box in the upper right labeled
20 service control server link.

21 Q. And I think -- did we hear from Headwater's expert that
02:02 22 this centralized server was a key part of the Headwater
23 patents?

24 A. Yes, we heard him state that.

25 Q. Now, why might a centralized server have been important

1 to the invention that was actually disclosed in the patents?

2 A. Well, a centralized server, you know, has actually many
3 advantages. But in the context, for example, of a billing
4 system, it allows you -- it makes it much easier to keep track
5 of the different billing operations and ensure that you don't
02:02 6 get out of sync with who's being billed for what.

7 Q. Now, to be clear, Dr. Foster, are you saying that the
8 Headwater patent system as a whole can only ever include one
9 box?

10 A. I'm not, no.

11 Q. What do we see here on the right-hand side of slide 72?

12 A. Well, here we show the -- a number of replicated physical
02:02 13 boxes, servers, each of which is shown as performing the same
14 operations--receive, generate, transmit.

15 Q. Now, how do the accused push systems architectures differ
16 from the Headwater approach?

17 A. Well, a key difference is that they separate, and I think
18 for very good reasons, the activities of receiving requests,
19 which is performed by these request servers, and then the
20 functions of generating messages and transmitting those
02:03 21 messages to devices which is performed by these connection
22 servers.

23 Q. So we have one group of servers for the receiving
24 functionality and a separate group of servers for the generate
25 and transmit functionality. Is that what you're saying, sir?

1 A. That's right. That's correct.

2 Q. And that's how the accused push systems work. Is that
3 right?

4 A. That's correct.

02:03

5 Q. Now, can you explain to the jury what are some of the
6 advantages of using that sort of divided architecture in the
7 accused products?

8 A. Well, one important advantage is -- relates to scaling.
9 So remember that the -- you know, for example, the Google
10 system started with maybe only a million devices connected to
11 it, but it rose up to billions. So you want to be able to
12 quickly add support for additional devices in which case you
13 can add additional connection servers or you may want to
14 quickly add support for additional applications in which case
15 you add support for additional request managers.

02:04

16 Q. Is there another advantage of the divided architecture
17 used in the accused push systems?

18 A. Yeah. It's -- one I think is important relates to
19 latency, and if I'm using a local map to illustrate this, but
20 say you've got communications coming from an application
21 server in Tulsa, they need to get to Houston, and you know the
22 phone in Houston, of course, may sometimes be offline so how
23 are you going to get to messages to it quickly? You want to
24 get the messages as close as possible to that device so they
25 are ready to deliver when the device comes back online. So

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1 you'd like to have a connection server ideally in Houston, and
2 if not there, somewhere nearby, say in Austin.

3 Q. Now, as far as you can understand, does Headwater's
4 technical expert agree that the accused push messaging systems
5 have multiple servers around the country?

02:05 6 A. I believe he does, yes.

7 Q. And so what does Headwater do in order to allege that the
8 accused systems have a server architecture like that in the
9 claims?

10 A. Well, he asserts that, you know, any number of servers
11 of, you know, regardless of what they're used for, can be
12 viewed as a single server so that they satisfy the terms in
13 the claims.

14 Q. Now, I want to try to help to create an analogy that
02:05 15 maybe will be useful to all of us. Can you help me with that,
16 Dr. Foster?

17 A. Sure, let's try it.

18 Q. Can we imagine a scenario together where we have the jury
19 and they're deliberating, and one person is going to be
20 assigned to collect the questions from all the other jurors.
21 Do you have that in mind?

22 A. I do.

23 Q. And can we also understand that there is another person
24 that is going to be the foreperson who's going to deliver
25 those collected message to the Court.

1 A. Okay.

2 Q. Understand that so far?

3 A. Yes.

02:06

4 Q. So we have -- in that situation we have two people, each
5 of them performing different functions.

6 A. Yes.

7 Q. One is the note collector, one is the communication with
8 the Court. Do you understand that?

9 A. I do.

10 Q. If I walk into the jury room and I draw a giant box
11 around those two people, does that become one person?

12 A. No, it does not.

13 Q. And is that similar to your point you're making about the
14 difference in architecture?

15 A. Yeah. I like the analogy. So you've got your request
16 manager who's collecting the things and passing them on to the
17 foreman who's the connection server.

02:06

18 THE COURT: And that's just an analogy. That will
19 not happen.

20 THE WITNESS: Okay.

21 Q. (BY MR. THOMPSON) Now, based on your career in grid
22 computing and working with distributed servers, is Headwater's
23 expert's analysis technically accurate?

24 A. It is not, no.

02:07

25 Q. Now, Dr. Foster, have you seen some various diagrams in

1 court and in your studies showing the push server systems
2 represented differently like we see on this page?

3 A. I have, yes.

4 Q. And in the upper left hand, we see the push server
5 systems depicted as one box. Do you see that?

6 A. I do.

7 Q. And in the picture on the bottom left, we see the push
8 server systems depicted with a couple of different boxes
9 representing servers. Do you see that?

10 A. I do, yes.

02:07 11 Q. And then I think we looked at the one on the bottom right
12 where there's a server farm and there's thousands of servers.
13 Do you see that also?

14 A. I do.

15 Q. Do the varying levels of detail have anything to do with
16 the audience of that particular document or its purpose?

17 A. Yeah, certainly I think both the audience and its
18 intended purpose.

19 Q. And why do you say that?

02:08 20 A. Well, you know, the upper left is very abstract. You
21 know, it's probably designed to explain, one, perhaps
22 primarily that messages are moving from applications to
23 devices. The lower left introduces some more specifics. It
24 explains that there are two classes of servers.

25 And then the lower right, you know, makes clear that

1 there are actually multiple instances of each sort of server
2 being used.

02:08

3 Q. Dr. Foster, I was walking into the courtroom here today
4 and I noticed a map of Texas with some various animals. Have
5 you seen the map outside the courtroom there?

6 A. I did, yes. I spent some time studying it, yeah.

7 Q. Okay. I just passed it by, but I noticed there was a
8 snake that appeared on a part of that map. Did you see
9 something similar to that?

10 A. I did, yes.

11 Q. And does that tell us that there's only one snake in
12 Texas?

13 A. I hope so, yes. No, it doesn't.

02:09

14 Q. Now, so is it your belief that the server architecture in
15 the accused products is different from the architecture
16 required in the patent, the '117 Patent?

17 A. It is, yes.

18 Q. And for that reason alone, could the jury find that the
19 '117 Patent is not infringed?

20 A. I believe so, yes.

21 Q. Can you tell us about the approach that you mentioned for
22 message delivery related to the '733 Patent, claim 1?

02:09

23 A. Yes. So the 77 -- excuse me, my wife's area code is
24 '773. So the '733 Patent requires that a service control
25 device link agent receive a message, extract an agent

1 identifier from it, and deliver to something -- deliver the
2 message to something called a device agent.

3 Q. Okay. And does the '117 Patent also require a similar
4 approach?

02:10 5 A. Yes. So it's a similar approach but using slightly
6 different terminology. It talks about a device messaging
7 agent delivering the message to a software process.

8 Q. Now, so that we can track Headwater's view here, what
9 does Headwater say is the device agent identifier in the '733
10 Patent claims?

02:10 11 A. They assert it's the application package name.

12 Q. And when it comes to the '117 Patent, what does Headwater
13 say is the application identifier?

14 A. He says it's again the application identifier is the
15 package name.

16 Q. Okay. So we've got the '117 Patent, application
17 identifier is the package name. The '733 agent identifier is
18 the package name. Am I correct so far?

19 A. That's correct.

02:11 20 Q. And does Headwater's expert agree with you that messages
21 are delivered to an application using that package name?

22 A. That is correct, yes.

23 Q. And do we see that actually here on Mr. de la Inglesia's
24 slides he presented in court?

25 A. Yes. So this is a slide we saw earlier saying, you know,

1

2

02:11

3

Q. And, again, is that consistent with the Android

4

documentation telling us that the name of the application

5

package to handle the intent is the package name?

6

A. That's correct. Right. So the intent is the message and

7

the name of the application package is specified by the

8

setPackage function.

9

Q. And is that consistent with the analogy you described for

10

us earlier with respect to the Spotify application?

02:12

11

A. Yeah. This is not an analogy, it's an example. But,

12

yes, the package name might be Spotify music and the message

13

is, you know, whatever I want to send to the Spotify music

14

application.

15

Q. And so in the accused push messaging systems, are the

16

packages being dropped off at the application. Is that

17

correct?

18

A. That's right. So this is the package with the new

19

Rolling Stones song perhaps being delivered to my house.

02:12

20

Q. Then is it up to the application to decide internally

21

what to do next?

22

A. That's right.

23

Q. Now, Dr. Foster, does the '117 Patent require that the

24

message is forwarded -- the device messaging agent forwards

25

the application data in the message to the software process

1 via a secure interprocess communication service?

02:13

2 A. Yes, that's right. That's the last line of the lower
3 right box. Okay.

4 Q. And on the '733 Patent, does it require that we have an
5 agent identifier that was in a decrypted agent message?

6 A. That's right. It's in the middle of the left-hand box
7 there that refers to that.

8 Q. And does the claim read at the bottom that, based on the
9 particular agent identifier, deliver the message content to
10 the particular device agent?

11 A. That's right, yes.

02:14

12 Q. Now, again, you and Mr. de la Inglesia agree that these
13 messages are delivered to the application. Correct?

14 A. That's correct, yes.

15 Q. But do the claims say that the message needs to be
16 delivered to the software process or to a particular device
17 agent?

18 A. That's right, yes. So in the case of the '773 [sic],
19 it's the device agent. For the '117, it's the software
20 process.

02:14

21 Q. So the claims require the delivery be more specific than
22 delivering to an application.

23 A. That's right.

24 Q. And is that plain in the claim language you see in each
25 of these claims?

1 A. It is, yes.

2 Q. And does that provide you with a second reason why
3 neither of the accused features use the asserted patents?

4 MR. FENSTER: Objection.

5 THE WITNESS: It does.

6 MR. FENSTER: Objection, Your Honor. Rule 26, and
7 if we could take this down, please.

8 THE COURT: Can you be more specific with your
9 objection, counsel?

10 MR. FENSTER: Yes, Your Honor. There was no notice
02:15 11 in Dr. Foster's report that -- of non-infringement as to
12 either of these two elements that he's going into now.

13 THE COURT: All right. Do you believe, Mr.
14 Thompson, there's support in the expert's report for this?

15 MR. THOMPSON: Yes, sir, Your Honor. Would you like
16 me to approach or describe it from here.

17 THE COURT: I'll send the jury out, and then we'll
18 get into the report and see if there is or isn't support for
19 this.

20 Members of the jury, if you'll leave your notebooks where
02:15 21 they are, follow all my instructions, and retire to the jury
22 room, we'll have you back here as quickly as we can.

23 The jury should retire to the jury room.

24 (Whereupon, the jury left the courtroom.)

25 THE COURT: All right. Be seated.

02:15 1 Mr. Thompson, I have the opening report from Dr. Foster.
2 I also have his rebuttal reports. Tell me where you believe
3 there's support for this.

4 MR. THOMPSON: Yes, sir, Your Honor. If I could
5 turn you to the rebuttal report, and I'll take you first to
6 paragraph 76.

7 THE COURT: 783, did you say?

02:16 8 MR. THOMPSON: 76.

9 THE COURT: 76. Just a moment.

10 MR. THOMPSON: Yes, sir.

11 THE COURT: Okay.

12 MR. THOMPSON: In this paragraph, we see an
13 introduction that Mr. de la Inglesia, he points to various
14 features as allegedly constituting a plurality of device
15 messaging agents which are inconsistent with his infringement
16 theory for subsequent limitations that rely on device
17 messaging agents.

18 And I'll note for Your Honor, that becomes important
02:16 19 because the subsequent limitation that I believe is at issue
20 relates to a responsibility of a device messaging agent.

21 And in paragraph 78, Dr. Foster says Mr. de la Inglesia's
22 allegation that each SPP enabled application including their
23 usage of SPP client libraries --

24 THE COURT: Just a minute. You don't need to read
25 it to me verbatim.

1 MR. THOMPSON: Okay.

2 THE COURT: If you're going to, do it a little
3 slower, please.

4 MR. THOMPSON: Yes, sir. He says that an
02:17 5 application constitutes a device messaging agent, and that's
6 inconsistent with the claim requirements.

7 And then he quotes, claim 1 requires, and he goes into
8 the limitation at issue, plurality of device messaging agents,
9 and I'll skip forward to the important part: map the
10 application identifier in the message to a software process
11 corresponding to the application identifier, and for --

12 THE COURT: Just a minute. Let me find where you
13 are.

14 MR. THOMPSON: Yes, sir.

02:17 15 THE COURT: Okay. Map the application identifier.
16 I'm with you.

17 MR. THOMPSON: Yes, sir. On the next line, forward
18 the application data in the message to the software process.
19 So the claim requires we forward the data to the process.

20 Now --

21 THE COURT: All right. The jury is out of the room
22 so let's put the slide up that was pulled down so I can see
23 exactly what elements are marked. Okay?

02:18 24 MR. THOMPSON: I need to go to -- I started with
25 '117. So this is the '117. So we see at the bottom here,

1 forward the application data in the message to the software
2 process. Now, the next line --

3 THE COURT: Just a minute. Is this the slide you
4 had up? I don't remember --

5 MR. THOMPSON: Well, I'm sorry. I started with the
6 reverse order. I can go to '733 first because it relates to
7 both patents.

8 THE COURT: Mr. Thompson, let's talk one at a time.
9 Okay?

02:18

10 This slide with the two nos on the right, that's what I
11 recall seeing. Is that what you had up?

12 MR. THOMPSON: No, sir. I was at the very next
13 slide. It's the same issue, and I apologize. I went in
14 reverse. So I'd like to -- I can either go with -- is this
15 going to be an issue for the '117 Patent as well?

16 MR. FENSTER: It certainly is, Your Honor.

17 MR. THOMPSON: Okay.

18 THE COURT: Let's cover all we can at the same time.
19 I just want to make sure we have the right slide up.

20 MR. THOMPSON: Yes, sir.

21 THE COURT: Keep going, please.

02:19

22 MR. THOMPSON: So with the '117 Patent, we see the
23 requirement at the bottom here: forward the application data
24 and the message to the software process. And there's a no.

25 And in Dr. Foster's report, he says -- he points to

1 limitation 1[h], which I'll note for Your Honor at the time of
2 the report exchange, 1[h] was this forwarding limitation. And
3 I'm happy to bring up Mr. de la Inglesia's report to -- to
4 show that.

02:19

5 THE COURT: Well, let's continue focusing on
6 Dr. Foster's report.

7 MR. THOMPSON: Yes, sir. And so Dr. Foster says Mr.
8 de la Inglesia maps an application on a given end-user device
9 as the software process.

10 THE COURT: All right. Just a minute. Which
11 paragraph are you at now?

12 MR. THOMPSON: Still 78, sir.

13 THE COURT: Okay.

14 MR. THOMPSON: About two-thirds of the way down the
15 bottom.

16 THE COURT: All right. Go ahead.

02:20

17 MR. THOMPSON: And then Dr. Foster continues,
18 "Accordingly, Mr. de la Inglesia's argument that an
19 application is a device messaging agent does not make sense as
20 an application does not forward application data to
21 itself." And that is the precise argument we're making here
22 today. And it continues further if you'd like more examples.

23 THE COURT: I'd like you to give me your best
24 argument on these issues, and then I'm going to hear from Mr.
25 Fenster.

1 MR. THOMPSON: Yes, sir. And so if we forward to
02:20 2 paragraph 84, and this still pertains to the '117 Patent.

3 THE COURT: All right. I'm at paragraph 84.

4 MR. THOMPSON: If you look about four lines down,
5 there's a sentence that begins with Claim 1 requires.

6 THE COURT: Yes.

7 MR. THOMPSON: And in that portion of discussion, he
8 again acknowledges the limitation that is map the application
9 identifier in the message to a software process corresponding
10 to the application identifier and forward the application data
02:21 11 in the message to the software process.

12 And the next line is, "Mr. de la Inglesia maps an
13 application on a given end-user device as the software
14 process. Mr. de la Inglesia's argument that an application is
15 a device messaging agent does not make sense."

16 THE COURT: All right. What else?

17 MR. THOMPSON: Since this is going to be an issue
18 for the '733 Patent as well, may I take Your Honor to the same
02:21 19 report, paragraph 198?

20 THE COURT: All right. I'm there.

21 MR. THOMPSON: In 198, Dr. Foster is referring to
22 claim 1 of the '733 Patent requiring an agent identifier, and
23 he notes that the subsequent limitations, including the
02:22 24 limitation he will opine is not satisfied, require that each
25 device agent is identifiable by an associated device agent

1 identifier.

2 And if I can take you now to paragraph 208. Let me know
3 when you're there, sir.

02:22 4 THE COURT: 208. All right.

5 MR. THOMPSON: In paragraph 208, Dr. Foster notes,
6 "Mr. de la Inglesia also opines that an FCM-enabled
7 application is identifiable by an application ID package
8 name."

9 Now, in 209, Dr. Foster says, "But Mr. de la Inglesia
10 does not explain how an application ID or package name is used
02:23 11 as the particular agent identifier to deliver a message to the
12 particular device agent."

13 And he continues on, the next sentence, "Instead, Mr. de
14 la Inglesia relies solely on the registration token," and as
15 we move past his quote, about how the push message is properly
16 addressed to the correct application.

17 And so he's making the point that the claim says you
18 deliver to an agent, Mr. de la Inglesia is saying that things
02:23 19 are delivered to the application, and that's a difference.

20 And I don't know what else we need to say on the stand
21 other than exactly what's here, and that's exactly what we
22 plan to do, Your Honor, and I've already done.

23 THE COURT: All right. Mr. Fenster, do you have a
24 response to all that?

25 MR. FENSTER: Yes, Your Honor.

1 THE COURT: If you'll speak up, I can hear you from
2 there.

3 MR. FENSTER: Thank you, Your Honor.

4 First of all, each -- so the element that we were
02:24 5 referring to is the very last element, the mapping and
6 forwarding. Each of the references that Mr. Thompson
7 referenced in the report are under 1[a]. There is no opinion
8 at all with respect to either the '117 claim 1[h] that
9 references mapping and forwarding.

10 So let me start with the -- so none of the references
02:24 11 that he pointed to are under the proper element that they're
12 challenging now.

13 So in the '117, the proper -- he does discuss element
14 1[h] at the time, and there is no discussion in his report on
02:25 15 those paragraphs about mapping and forwarding. Instead, it's
16 only secure interprocess communication.

17 At his deposition we confirmed that. This is at November
18 8th, 2024, at page 293, and we asked him specifically, "Do you
19 have an opinion in your report --"

20 THE COURT: Just a minute, Mr. Fenster. Go to the
02:25 21 podium and put that on the elmo so I can see it, please.

22 MR. FENSTER: "Do you have an opinion in your report
23 disputing element 1[g], the portion of the claim element that
24 requires for each received message, map the application
02:26 25 identifier in the message to a software process corresponding

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1 to the application?"

2 The answer is, "I'm not aware of any such opinion."

3 We confirm later at just down the page, "Would you please
4 check your report to confirm that for either the Samsung Push
5 Platform theory or Firebase that you don't have an opinion
02:26 6 disputing the element 1[g], the mapping, is satisfied?

7 "Yeah, I'm not -- I do not find such an opinion."

8 And then he says, "-- and specifically which aspects of
9 1[h] are not satisfied?"

10 Here is regarding the secure interprocess communication
11 service element of 1[h]. And then he goes on to admit, "Do
12 you agree that the application data is forwarded, et cetera,
13 and that it's forwarded by an interprocess?"

02:27 14 So he specifically confirmed he had no opinion with
15 respect to 1[h] of the '117 Patent. And that's consistent
16 with his report that there is no discussion of the mapping and
17 forwarding in connection with that mapping and forwarding,
18 element 1[h] of the '117 Patent.

02:27 19 And, Your Honor, while -- with respect to the '733
20 Patent --

21 THE COURT: Go ahead.

22 MR. FENSTER: With respect to the '733 Patent, Your
23 Honor, the portions that Mr. Thompson referred to are all
24 under element 1[a], and there is no opinion with respect to
25 the corresponding element at the end of mapping and forwarding

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02:28 1 in Mr. -- Dr. Foster's opinion for the mapping and forwarding
2 element, the last element for the '733 Patent.

3 They gave no notice of that at all, that those -- that
4 those elements would be disputed.

5 THE COURT: All right. Anything further, Mr.
6 Fenster? Do you have anything further?

7 MR. FENSTER: No. That's it for that.

8 THE COURT: All right.

9 MR. THOMPSON: May I briefly address the arguments?

10 THE COURT: Yes, Mr. Thompson. I'll give you
11 another opportunity.

02:29 12 MR. THOMPSON: So Mr. Fenster stated that there was
13 no reference to the limitation 1[h], that's the limitation in
14 dispute, in Dr. Foster's report when it concerns the '117
15 Patent. But as I pointed to previously, in paragraph 78,
16 limitation 1[h] is expressly mentioned as a limitation at
17 issue.

02:29 18 And while the beginning of that section includes an
19 excerpt from limitation 1[a], the very first paragraph
20 explains that it's the mapping of these device messaging
21 agents throughout the claim that matters, and he refers to his
22 theory being inconsistent with a device messaging agent by
23 limitation 1[a] for antecedent basis, meaning all the
24 limitations that are requiring this specific device messaging
02:30 25 agent that he believes has been mismatched, they are all

1 affected.

2 And he explains that later in 78 where he specifically
3 mentions limitation 1[h]. And all of the testimony Dr. Foster
4 just gave on this is nearly verbatim what is here in paragraph
5 78.

6 THE COURT: All right. Anything further from you,
7 Mr. Thompson?

8 MR. THOMPSON: One more thing.

9 To be clear, Dr. Foster is not disputing that there is a
02:30 10 mapping. He is disputing the delivery aspect. So to the
11 extent Mr. Fenster showed you the admission concerning his
12 lack of opinion on the mapping, that's not the portion of the
13 claim he just pointed to in his testimony.

14 THE COURT: All right. You-all are using your
15 designated trial time with this process, but I'll ask, Mr.
16 Fenster, if you have the final word on anything additional I
17 haven't already heard?

02:30 18 MR. FENSTER: Just that his report, Your Honor, goes
19 through, it's organized by element and it identifies the
20 arguments under each specific element. And under 1[h] there
21 is a specific discussion, an entire discussion about only
22 secure interprocess communication, and that's what he referred
23 to and confirmed in his deposition.

24 THE COURT: Okay. All right. Well having listened
25 to your arguments, looked at the various materials you

02:31 1 displayed to the Court, this is, in my opinion, one of those
2 situations that's not unique in that what the witness may have
3 said on deposition doesn't necessarily match with what the
4 report says.

5 The report gives adequate notice to the Plaintiff on
6 these issues, in my view. I'm not going to prevent Mr.
7 Thompson from going through these slides. However, on cross
02:31 8 examination it is fair game for the sections of the witness'
9 deposition that you believe are directly contrary to this to
10 be used to impeach his credibility before the jury. And you
11 will have a free and open opportunity to do that when you
12 cross-examine the witness.

13 But at this point I'm going to deny the motion to strike
14 this, but I'm going to recognize that there may be a valid
15 opportunity to impeach on cross examination, and that
16 is -- that's the Court's ruling.

02:32 17 I'm going to allocate this time to both parties equally
18 given that there is some apparent inconsistency here between
19 the report and the deposition. But the resolution of that, in
20 my view, is to allow the testimony supported by the report and
21 then see if it does or doesn't hold up on cross examination
22 with open impeachment as a possibility.

23 All right. Let's bring the jury back in, please.

24 (Whereupon, the jury entered the courtroom.)

02:33 25 THE COURT: Thank you for your patience and for your

1 cooperation, ladies and gentlemen. Please have a seat.

2 We'll continue with the direct examination of Dr. Ian
3 Foster.

02:33 4 Go ahead, please, Mr. Thompson.

5 MR. THOMPSON: Thank you, sir. One moment. I
6 believe my clicker is disconnected.

7 (Brief pause.)

8 THE COURT: Are you ready to proceed?

9 MR. THOMPSON: Yes, sir.

10 THE COURT: Let's proceed.

11 Q. (BY MR. THOMPSON) So we were just having our discussion
02:33 12 about the claim requirements of claim 1 of the '733 and claim
13 1 of the '117 Patent, Dr. Foster. Do you recall that?

14 A. I do, yes.

15 Q. And we were talking about the requirement in claim 1 that
16 you have a particular device agent and, based on the
17 particular agent identifier, deliver the message content to
18 the particular device agent. Do you recall that?

19 A. I do, yes.

02:34 20 Q. And in the '117 Patent, we see at the very end, forward
21 the application data in the message to the software process.
22 Do you see that?

23 A. I do, yes.

24 Q. And can applications have multiple processes within them?

25 A. Yes.

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1 Q. And can applications have multiple components or agents?

2 A. They can, yes.

3 Q. In the accused systems, is the message forwarded or
02:34 4 delivered to some specific component or specific process
5 within the application, inside?

6 A. No. The messaging system delivers it to the application.

7 Q. And do you and Headwater's expert actually agree on that?

8 A. I believe so, yes.

9 Q. And is that another reason why the '733 Patent claims,
10 claim 1 is not infringed by the accused features?

11 A. Yes.

12 Q. And is that also a reason why the '117 Patent, claim 1,
02:35 13 is not infringed by the accused features?

14 A. Yes.

15 Q. Now, let's talk about the asserted dependent claims.

16 If the accused systems do not infringe claim 1 of either
17 patent, can they infringe any of the asserted dependent
18 claims?

19 A. My understanding is they cannot.

20 Q. And why is that?

02:35 21 A. Well, so a dependent claim by sort of definition is
22 saying, well, if the independent claim is true, then the
23 dependent claim is then an additional element that you want to
24 be considered for the patent.

25 Q. And is that just part of patent law? If you don't

1 infringe an independent claim, you can't infringe the
2 dependent claims?

3 A. That's my understanding, yes.

4 Q. Does anyone disagree on that here?

5 A. I don't believe so, no.

6 Q. Now, I want to shift gears here, Dr. Foster. You
02:36 7 mentioned earlier today that the Google push messaging system
8 had several different versions over the years. Do you recall
9 that?

10 A. I do.

11 Q. And when was the first version of the Google push
12 messaging system released?

13 A. 2008.

14 Q. Can you remind us again of the name of the system back
15 then?

16 A. That was called GtalkService Messaging.

17 Q. In your opinion when it comes to the aspects of the
18 Google push messaging system that are the focus of this case,
02:36 19 have most of those aspects remained the same?

20 A. They have, yes.

21 Q. Obviously they have improved the system over the years,
22 but do you believe the core components that matter in this
23 case are the same?

24 A. That is my opinion, yes.

25 Q. So then does Headwater contend that the first version of

1 the Google push messaging system uses the Headwater
2 technology?

3 A. Can you repeat the question, please?

02:37

4 Q. Sure. Is Headwater accusing the early first system of
5 using the patent, the GtalkService system?

6 A. No, he is not.

7 Q. And what would be the result if the first version of the
8 Gtalk messaging system was using Headwater's patents?

9 A. My understanding is that would then invalidate the two
10 patents.

11 Q. Now, what sorts of materials did you review in order to
12 understand the GtalkService messaging version from 2008?

02:37

13 A. I had access to some source code, a fair number of
14 documents, and, of course, testimony by Mr. Hansen.

15 Q. Now, why was the GtalkService push messaging originally
16 developed?

02:38

17 A. Yeah. So it was originally developed as a mechanism for
18 communicating push messages as supported by the Google's
19 GtalkChat application.

20 Q. And was the system later modified to also be able to push
21 messages to Gmail, Calendar, and Contacts?

22 A. Yes.

23 Q. And were those messages all sent over the same single
24 push channel?

25 A. That's my understanding, yes.

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1 Q. What do we see here on slide 99?

02:39

2 A. So this is a document called a brief history of FCM,
3 which was authored by a Google engineer to describe how the
4 various features of this, what is now called, FCM were
5 developed over a number of years.

6 Q. And is this JX 51 we're looking at?

7 A. That's right.

02:39

8 Q. And did the Android phones launch in 2008, including this
9 GtalkService push messaging?

10 A. They did, yes.

11 Q. Now, did you find any documents that discussed
12 GtalkServices and how it was used back in 2008?

13 A. Yes. So -- one document I found, this is via a wonderful
14 site called the Wayback Machine which lets you look at
15 versions of web pages, you know, from the past. I found a
02:39 16 document dated May 11th, 2008, which is part of some
17 internal -- not internal -- public documentation of the
18 Android system.

19 Q. And what does this particular document from 2008 say
20 about GtalkService?

21 A. Well, it talks about the GtalkService, describes it as an
22 API that passes messages between users, it also describes the
23 use of intents to communicate the message, and finally it says
02:40 24 a few words about the use of a persistent socket connection.

25 Q. Is that persistent socket connection the connection

1 between the message server and the phone?

2 A. Yes. Sorry. That's from the message -- well, from the
3 phone to the message server, more precisely.

4 Q. Now, was the GtalkServices included on an Android device
5 that was actually sold in 2008?

02:40

6 A. Yes. So the first Android devices that were sold, you
7 had the GtalkService messaging on it and these were then used
8 to -- by a variety -- by four applications--Mail, Calendar,
9 Gtalk itself, and Contacts.

10 Q. At the time that GtalkServices was released in 2008, were
11 third-party apps also allowed to use that persistent
12 connection or not?

13 A. They were not, no.

02:41

14 Q. And does that matter for purposes of the patent claims at
15 issue here?

16 A. Not as far as I can tell, no.

17 Q. Based on your review of the materials in this case,
18 what's your understanding about the general architecture of
19 the GtalkServices messaging back in 2008?

02:41

20 A. Yeah. I understand it had application servers, only four
21 of them back then, and then this -- again this divided
22 architecture that allowed for messages to be communicated from
23 applications to mobile devices.

24 Q. And did the brief history of FCM document we looked at
25 indicate that there was a divided architecture between

1 requests or session servers and connection servers?

2 A. Yes, it did actually, yeah.

02:42 3 Q. Now, how would the GtalkServices system have sent a push
4 message, for example, to Gmail back in 2008?

5 A. Essentially in the same way as is done today with the 5H
6 cloud messaging. So the application server would send a
7 message to a request server, the request server would identify
8 the appropriate connection server, and send the message there.
9 That would then package the message up and transmit it to the
02:42 10 appropriate -- or to the targeted end-user device.

11 Q. And if we had had this phone back in 2008, would we have
12 seen a notification on our user interface or our screen
13 telling us about the push message?

14 A. Yeah, we could have. So here I show a couple of -- some
15 code from the -- what -- that would have run on the phone at
16 the time; a notification manager, that could be used to
17 generate notifications; and on the right, it's an image from a
02:43 18 YouTube video from the time showing a notification appearing.

19 Q. And the technical documentation on the left for the
20 notification manager, is that part of JX 9?

21 A. Yes, that's right, yeah. And it's dated -- well, anyway
22 it's dated 2007, I think.

23 Q. How is a user's device identified for delivery of a
24 GtalkServices push message?

02:44 25 A. So the underlying communications is handled via this

1 system called XMPP, and this is some documentation from XMPP
2 and it indicates how you can provide a resource identifier to
3 specify the device to which a message was to be delivered.

4 Q. And how were the push messages routed to the correct apps
5 once the message got to the phone itself?

02:44

6 A. It was by the user -- well, specifying, for example, the
7 commonly the action that was to be -- the action
8 that -- providing an action name that would then be used to
9 term the application that was -- that would process the
10 message.

11 Q. And were these actions part of the intents we've been
12 hearing about?

02:44

13 A. That's right. So here we're showing basically the intent
14 system at the time. Action was one thing you could specify to
15 restrict who was allowed to access the intent. And then, of
16 course, it also has the data component.

17 Q. And I believe we heard Mr. Hansen say that the intent
18 action field would also allow the identification of a package
19 name. Do you agree with that?

20 A. That's right, yes.

21 Q. And what did the -- what is the code we see here on this
22 slide?

02:45

23 A. Yes. So this is -- it's -- this is some code -- what is
24 it? Yeah. So it's some sample code showing the -- specifying
25 that a particular application called API Demos that was

1 developed early to help people learn how to implement Android
2 applications was to be triggered on the -- if an intent
3 specified an action of sample Gtalk data message.

02:45 4 Q. And are we looking at JX 72 here?

5 A. That's right.

6 Q. Can you tell us, Dr. Foster, what happened in
7 GtalkServices back in 2008 if there was a message intended for
8 the phone but your device was offline?

9 A. Yeah. So, of course, you wanted the message to be stored
10 and forwarded when you became -- when the phone became
11 available again. And this was -- to do -- to enable this

02:46 12 version of the connection server called the mobile connection
13 server or MCS, was developed that would perform that storage
14 and subsequent forwarding.

15 Q. And that MCS is the server referred to back in 2008. Is
16 that correct?

17 A. That's right, yes.

18 Q. And is that still the name of the same server today in
19 the accused push systems?

20 A. It is, yes.

21 Q. Which device would initiate the reconnection if the phone
22 went offline, the connection back to the server?

02:46 23 A. It was the phone because, of course, that's -- it knows
24 it's coming back online so it needs to reconnect itself.

25 Q. Now, for purposes of the push network -- sorry, the push

1 messaging system elements we've been focusing on, package
2 names, applications, intents, are there material differences
3 between the original version and the current versions?

4 A. No, there are not.

02:47 5 Q. Now, during our discussion pertaining to infringement by
6 the accused systems, you offered an opinion that the current
7 version had a different architecture and a different delivery
8 approach compared to the patents. Do you recall that?

9 A. I do, yes.

02:47 10 Q. And so given your opinion about the accused systems, is
11 it your opinion that the earlier 2008 push messaging version
12 would have those same differences from the patent?

13 A. I agree it would, yes. That is my opinion.

14 Q. And are technical experts required to apply the same view
15 of the patent when they are approaching infringement compared
16 to invalidity?

17 A. They are, yes.

18 Q. Okay. So let's talk about Headwater's view.

02:48 19 Now, it's Headwater's position that the accused systems,
20 the more recent systems, they meet all the claim elements. Is
21 that correct?

22 A. That is correct.

23 Q. And given that, does Headwater's expert agree with you
24 about the prior art version of the system? Let me ask you a
25 better --

1 A. I want to make sure I answer the right question so please
2 re-ask it.

02:48

3 Q. Given that Headwater's expert says the modern versions of
4 the push messaging system meet all the claim elements, does he
5 also say that the previous version meets all the same claim
6 elements?

7 A. No, he does not say that.

8 Q. And what is Headwater's position on that?

9 A. Well, they have asserted that the GtalkService is
10 different from the accused Google push messaging versions,
11 and, therefore, the patents are still valid.

02:49

12 Q. Okay. We've seen this slide a couple of times. First
13 was in Headwater's opening. Were you here for the opening
14 presentations, Dr. Foster?

15 A. I was, yes.

16 Q. And did you see this slide Headwater presented that
17 compared the prior art to the accused Samsung push system?

18 A. I did, yes.

19 Q. And by the accused Samsung push system, I believe they
20 mean the Google and the Samsung versions. Were you here for
21 that?

22 A. I was, yes.

02:49

23 Q. What were the only two differences that Headwater says
24 existed between the accused push systems and the really early
25 push system?

1 A. Yes. So there are two, as you said. First of all, he
2 claimed that the prior art used implicit intents and therefore
3 was not secure while the accused systems used setPackage and
4 therefore were secure.

5 And, secondly, that the prior art system didn't specify
02:50 6 an application identifier; therefore, was not able to ensure
7 delivery to the right application, while the accused systems
8 used an application ID of a package name which ensured that it
9 would go to the right application.

10 Q. Now, Dr. Foster, do both of these differences essentially
11 boil down to whether there was a package name used in the
12 prior art system?

13 A. I believe so, yes.

02:50 14 Q. Now, I want to put a pin in that for just a minute.
15 Before we talk about that, this opening slide also says at the
16 bottom left, Google removed Gtalk functionality from Android
17 1.0. Do you see that?

18 A. I do.

19 Q. Is that true?

20 A. No, it is not true.

21 Q. Did Android 1.0 include GtalkServices push messaging to
22 service four of the Google apps?

23 A. It did, yes.

24 Q. Was that confirmed by Mr. Hansen's testimony and the
25 documents you reviewed?

1 A. It was, yes.

02:51

2 Q. Now let's turn to this issue about intents and package
3 names. Can you tell me what are the claim terms that are
4 relevant here when we're talking about package names, whether
5 they are in the prior art and the accused systems --

6 A. Yeah. So in the case of the '117 Patent, you know, the
7 requirement is that we have an agent identifier -- sorry. No.
02:51 8 I'm getting things back to front.

9 So let's talk about the '773 [sic] Patent on the right
10 first. So we need an agent identifier to meet the claim term.
11 And in the case of the '117 Patent on the left, we need an
12 application identifier. And then we also need a secure
13 interprocess communication service.

02:52

14 Q. So when it comes to the '733 Patent, Headwater believes
15 that this agent identifier is what's missing in the earliest
16 version. Is that correct?

17 A. That's correct, yes.

18 Q. And when it comes to the '117 Patent, Headwater says the
19 prior art, the early Google Talk service was missing an
20 application identifier and the secure interprocess
21 communication service.

22 A. Yes, that's right.

23 Q. Okay. And according to Headwater's mapping, all of those
24 things are accounted for with a package name. Is that your
25 understanding?

1 A. That's my understanding, yes.

02:52

2 Q. And Headwater says this package name was not there in the
3 prior art. Is that what they're saying?

4 A. That's right, yes.

5 Q. Now, when it comes to Headwater's infringement case, what
6 are they pointing to as the agent identifier, application
7 identifier, and the security of the interprocess
8 communication?

9 A. It's this package name field where a package name
10 corresponds to an application.

02:53

11 Q. And the package name they're referring to, does that
12 refer to what is sent in this intent that we've been talking
13 about?

14 A. That's correct, yes.

15 Q. When you send a message in Android, it can be called an
16 intent and the intent can specify a package name for an
17 application. Is that your understanding?

18 A. Yes, that's right.

19 Q. And that's not -- according to Headwater, that didn't
20 exist before Headwater's patents. Is that your
21 understanding --

22 A. That's my understanding, yes.

23 THE COURT: Let him finish, please, Mr. --

02:53

24 THE WITNESS: Apologies, yeah.

25 Q. (BY MR. THOMPSON) What do we see here on slide 117?

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1 A. Yeah. So this is code again, you know, from back in the
2 past. This is from November 2007. It's a description -- it's
3 some documentation for the Android intent mechanism.

02:54

4 Q. And to be clear, did you capture this by looking at the
5 Wayback Machine and what the page would have actually looked
6 like back in 2007?

7 A. That's right, yes.

8 Q. And does this documentation describe these Android
9 intents and how they were used back then?

10 A. That's right.

11 Q. And what does it say about the action parameter here?

12 A. Well, it just says it's the general action to be
13 performed.

02:54

14 Q. Now, did you review this page to understand what this
15 action parameter included?

16 A. I did, yes.

17 Q. Let's take a look at that.

18 MR. THOMPSON: Can I pull up JX 9 at page 39? And
19 if we can zoom in -- there we go.

20 Q. (BY MR. THOMPSON) Is this the action that you're
21 referring to as part of this intent?

02:55

22 A. Yes. So this is -- actually it's the definition of the
23 function set action that was used to add an action name to an
24 intent.

25 Q. And this is how the actions could be used way back in

1 2007. Is that right?

2 A. That's right, yes.

3 Q. And does the Google page tell us that application
4 specific actions should be prefixed with a vendor's package
5 name. Do you see that?

6 A. I do, yes.

7 Q. And so is Headwater correct that package names were not
8 included in intents back in 2007?

02:56 9 A. No, they were not. There was no setPackage function to
10 explicitly put a package name in. But as shown here, you
11 could easily do it using this other function, the set action
12 function.

13 Q. So are you saying you could have had a special function
14 to say, hey, set the package or you could have just manually
15 put the package name into your action and you get the same
16 result?

02:56 17 A. Yes. And they, in fact, recommend that you do that.

18 MR. THOMPSON: Okay. We can take this down.

19 Q. (BY MR. THOMPSON) And would that have meant that the
20 intents used with the action including a package name back in
21 2007 would have been directed to a specific application?

22 A. That's right, yes.

02:56 23 Q. Now, in case this becomes interesting down the road, if
24 the jury were looking for the indication of the package name
25 in the prior art, could they find that at Joint Exhibit 9,

1 page 39?

2 A. That's correct, yep.

3 Q. Now, since we've been talking a little bit about
4 Headwater's view, can we imagine for a second that Headwater
02:57 5 applies the same approach to analyze the prior art that it's
6 taking to analyze the accused features?

7 A. Yes, let's do that.

8 Q. Okay. And do you understand I mean I'm putting on
9 Headwater goggles here and I'm looking at the prior art the
10 same way I'm looking at the accused features? Does that make
11 sense to you, Doctor?

12 A. It does.

13 Q. Okay. So with Headwater's goggles on, can you tell us
14 how the GtalkServices system in 2008 compares to the '733
02:57 15 Patent, claim elements of the preamble and 1[a]?

16 A. Well, first of all, I think we certainly have an end-user
17 device. And if we assume, as Headwater does, that the service
18 control link can go over the regular internet, then we also
19 have a service control link and we've got -- because we're
20 using TLS, we're performing encryption.

21 Q. Okay. So in your opinion under Headwater's view, would
02:58 22 GtalkServices have met elements 1 pre and 1[a]?

23 A. Yes, that's right.

24 Q. And under Headwater's view would the accused
25 features -- sorry. Under Headwater's view would the

1 GtalkServices system back in 2008 satisfy element 1[b] of the
2 '733 Patent?

3 A. Yes. Again, now we have the package ID there -- the
4 package name, sorry, that serves as a device agent identifier,
5 so that claim is satisfied.

02:58 6 Q. Now, how would we view the prior art system under
7 Headwater's view and limitations 1[c] through 1[f] of the '733
8 Patent?

9 A. Yes. So then -- sorry. I was reading ahead. So in this
10 case, you know, we've got a secure communication link, so a
11 message can be received at the device link agent, they can
12 then extract the agent message and retrieve the device agent
02:59 13 identifier identifying the application. So these are all
14 satisfied also.

15 Q. And, finally, taking Headwater's view of the asserted
16 patents, how does the GtalkServices prior art compare with
17 limitation 1[g] of the '733 Patent?

18 A. Yes. So we can create an intent that contains the
19 package name and that will then be delivered by the intent
20 mechanism to the application.

21 Q. Okay. And so under Headwater's perspective, would all of
02:59 22 the limitations of '733 Patent claim 1 be satisfied?

23 A. They would be, yes.

24 THE COURT: Dr. Foster, pull the microphone a little
25 closer to you, please.

1 THE WITNESS: I apologize.

2 THE COURT: That's all right. Just want to be sure
3 you're heard.

4 THE WITNESS: Yeah.

5 THE COURT: Go ahead, counsel.

6 Q. (BY MR. THOMPSON) Now can we do the same exercise,
7 imagining we're looking at the system through Headwater's view
8 of the patents and apply that to the '117 Patent?

9 A. Yes, but -- we can.

10 Q. Okay. And can you tell me about the first few elements
11 we have here?

03:00

12 A. Yeah. So we -- well, the first, we have a network system
13 that's -- I don't think there's any dispute about that. Then
14 we have the set of device messaging agents. Those are the
15 phones. And then we've got this network message server which,
16 you know, Headwater asserts is -- corresponds to the
17 combination of the request servers and the connection servers.
18 So we have all those elements.

03:00

19 We also have a secure connection. Again, there's no
20 dispute over that I think between the network message server
21 and the devices.

22 Q. Okay. And so taking Headwater's view, would element
23 1-pre and through 1[c] of the '117 Patent be satisfied?

24 A. They would, yes.

25 Q. Taking Headwater's view, how does GtalkService compare to

1 limitation 1[d] of the '117 Patent?

2 A. Yes. So, again, assuming the message service is actually
3 the conjunction of the request servers and the connection
03:01 4 servers, well, first of all, the network message server
5 receives requests from the application servers.

6 Q. And so under Headwater's view, would limitation 1[d] be
7 met?

8 A. Yes.

9 Q. Can you tell me how Headwater's view of the GtalkServices
10 system or of the patent would apply to GtalkServices system in
11 element 1[e] of the '117 Patent?

12 A. Yes. So the connection servers, which in Headwater's
13 view are part of the network message service -- server, are
03:01 14 then going to generate messages that are ready to send to the
15 end-user devices. So this is also satisfied.

16 Q. Taking Headwater's view, how does the GtalkService push
17 system compare to limitation 1[f] of the '117 Patent?

18 A. Yes. So the connection servers would then transmit the
19 message to the end-user devices so that item is also
20 satisfied.

03:02 21 Q. Last but not least, under Headwater's view, how does the
22 GtalkService push system compare with limitations [g], [h],
23 and [i] of the '117 Patent?

24 A. Well, under their interpretation, the device messaging
25 agent receives the messages, maps the application identifier

1 to a -- to a software process corresponding to an application
2 and forwards that message using an intent.

3 Q. Can we take a look, Dr. Foster, at the dependent claims?

4 A. I can, yes.

03:03 5 Q. Okay. And now, if I used Gchat back in 2008 and I sent
6 my grandmother an offer to mow her lawn, was that a
7 possibility back then?

8 A. It was, yes.

9 Q. And how does that relate to claim 7?

10 A. Well, it would either be a service offer or if she was
11 going to pay you, it could be a transaction offer.

12 Q. She never pays me.

13 A. Okay.

03:03 14 Q. And did you provide us evidence indicating that
15 GtalkService could display a notification to a user on the
16 screen of a new push message back in 2008?

17 A. Yeah, I did. I showed some source code -- sorry, some
18 documentation and a clip from a video.

19 Q. And how does that relate to dependent claim 19 of the
20 '733 Patent?

21 A. Oh, yeah, sorry. They are both showing -- they
22 demonstrated the ability and showed the effect of generating a
03:03 23 notification and displaying it on the user's screen.

24 Q. And would that satisfy claim 19 of the '733 Patent?

25 A. It would, yes.

1 Q. Moving to the '117 Patent, was there a way back in the
2 GtalkServices days to buffer multiple connections -- multiple
3 message requests?

4 A. Yes. I talked about how the mobile connection server
5 would use a reliable message queue to buffer those requests.
03:04 6 So that claim is also satisfied.

7 Q. Okay. I want to jump over to claim 16 because it relates
8 to claim 2. Was there -- did the system ultimately transmit
9 these collected requests after the device reconnected?

10 A. Yeah. That was the purpose of the reliable message queue
11 and its incorporation into the mobile connection server. It
12 would receive a buffer and forward on those messages.

13 Q. And when the device was reconnecting, was it the device
03:04 14 that initiated the secure connection back to the server?

15 A. It was the device, yeah.

16 Q. And so would that account for the dependent claims of the
17 '117 Patent?

18 A. It would, yes.

19 Q. And so assuming that we are putting on our Headwater
20 glasses that they're using to look at what they say was
21 invented in these patents and we stare at the prior art, does
22 the prior art meet all the elements of the claims?

23 A. Yes, the prior art in the form of GtalkService, yes.

24 Q. But in your view, looking at the patent as you understand
03:05 25 it was written and intended, do the accused systems and the

1 prior art both not satisfy these patents?

2 A. Well, I would express that none of them satisfy these
3 aspects.

4 Q. And is that because what you believe Dr. Raleigh invented
5 was not an aggregated push messaging system?

6 A. That's correct, yes.

7 THE COURT: Counsel, this is direct. Let's try not
8 to lead the witness so overtly.

03:05

9 MR. THOMPSON: Yes, sir.

10 Q. (BY MR. THOMPSON) Now, if Headwater tells us that the
11 Patent Office looked at these patents back in the day during
12 their examination and the Patent Office determined these
13 patents were valid and issued them, is that a fair statement?

14 A. Can you repeat that, please?

15 Q. Sure. Did the Patent Office already examine these
16 patents? That's why we're here today?

17 A. Yes, that's right.

03:06

18 Q. Now, Dr. Foster, have you seen any indication that the
19 Patent Office considered GtalkServices when deciding whether
20 these patents were valid or not?

21 A. Yes. My understanding is the Patent Office listed a set
22 of materials that they considered. These were documents,
23 published documents. They did not examine source code and
24 certainly not the GtalkService source code.

25 Q. And when the Patent Office is examining patents, do they

03:06 1 track down the road whether the patentee takes those patents
2 and then later accuses them against some other technology?

3 A. I don't believe that's their function or what they do.

4 Q. Now, I believe we heard earlier that Dr. Raleigh and his
5 colleagues at one of his companies, they were aware of C2DM,
6 GCM, and FCM, these Google features. Do you recall that?

7 A. I do, yes.

8 Q. And is it your understanding that when you apply for a
9 patent, you're supposed to tell the Patent Office, Hey, these
03:07 10 are things out there I know about that you might want to take
11 a look at?

12 A. That's my understanding, yes.

13 Q. Have you seen any evidence that Headwater, when it was
14 submitting these patents, said, Hey, Patent Office, you should
15 take a look at GtalkServices?

16 A. I have not, no.

17 Q. Now, when we look at validity, what are the two
18 requirements that must be met for a patent to be valid?

19 A. Yeah. So, first of all, clearly the ideas presented must
20 be new, but there's also a requirement that they not be
21 obvious.

03:07 22 Q. And when we look at something and whether it's obvious,
23 does that mean it would be -- might have been obvious to a
24 person like me, or is there some particular perspective we
25 have to take?

1 A. Yeah. So we're instructed to take the perspective of a
2 person of skill in the art in the particular area, which in
3 our case is defined as shown on this slide.

03:08

4 Q. And what is the level of a person of skill in the art,
5 sometimes abbreviated as POSITA --

6 A. POSITA, yes.

7 Q. -- that applies in this case?

8 A. Yeah. So it's at least a Bachelor's degree in computer
9 science or electrical engineering or some related field, and
10 then between two and three -- two, three, or five years of
11 experience building applications and services on communication
12 networks.

03:08

13 Q. And so if there is an invention that already exists and I
14 come along and I make a tiny little tweak and a person of
15 skill in the art says, That would be obvious, is it true I
16 can't get a patent on that idea?

17 A. That's right, yes.

18 Q. Now, we talked a little bit about application
19 identifiers. Was that something that was well-known before
20 the Headwater patents?

21 A. Yes, certainly.

22 Q. And what do we see here at DDX 264?

03:09

23 A. Yeah. This is one reference that I wanted to put
24 forward. So this is -- it's a technical specification. It's
25 actually sort of a standard developed by a community for

1 what's called the wireless application protocol, widely used
2 for some time. And, you know, it refers to the use of an
3 application identifier to identify an application.

03:09

4 Q. And we've heard some discussion about security
5 techniques. What do we see here on slide 130?

6 A. Yeah. So this is a figure and the cover page of -- and
7 some text from a patent awarded to a fellow called Kalibjian
8 in 2007. And there he describes a method for securing
9 communications between two processes running on a single
10 device by using cryptographic techniques.

03:10

11 Q. And is this DTX 12?

12 A. That's right, yes.

13 Q. Now, was it well-known before the patents in this case to
14 secure communications and to use application IDs to identify
15 applications?

16 A. That's right, yes.

17 Q. And if somebody came along and wanted to make a system
18 and needed to do those things, were techniques available?

19 A. They were, yes.

20 Q. Could a person have combined a later push system to add
21 security or application IDs if they wanted to?

03:10

22 A. They could have, yes.

23 Q. Would that have been obvious to you?

24 A. It would have been, yeah.

25 Q. But in this case did the GtalkServices system back in

1 2008 already have application IDs and security?

2 A. Yes, as we've noted, it did, yes. Well, at least
3 security as defined by the Headwater team.

4 Q. GtalkServices back in 2008 could use package names in
5 their intents. Do you agree with that?

03:11 6 A. Yes, that's right.

7 Q. All right. So I think we could be at a fork in the road
8 here, Dr. Foster. So I'm going ask you, if the jury were to
9 apply your understanding of these patents and what they're
10 really about, what's the outcome here?

11 A. Well, I would say that the patents are not infringed by
12 the Google messaging services or the Samsung messaging
13 services.

14 Q. And taking that same view, what about the validity under
03:12 15 your interpretation?

16 A. And the -- well, the patents, they're not infringed by
17 the existing products, it would not have been infringed by
18 GtalkService, and therefore the patents are valid, at least
19 from this perspective, yeah.

20 Q. And if we take Headwater's view, it would need to allege
21 infringement and we apply that to the prior art, what's the
22 result?

23 A. Yeah, so under Headwater's view in which the accused
03:12 24 products all infringe, then GtalkService messaging, which
25 practices the same things, would then invalidate the patents.

Shawn M. McRoberts, RMR, CRR
Federal Official Court Reporter

1 Q. Now, Dr. Foster, there was some additional issues you
2 were asked to respond to in your expert reports in this case.
3 Do you recall that?

4 A. I do, yes.

5 Q. And what is the first of those issues?

6 A. Well, the first one, if I remember the order we have
7 here, relates to battery life. Is that right?

03:12 8 Q. Was one of those issues the technical benefits of the
9 Headwater patents?

10 A. Yeah.

11 Q. And in your experience --

12 A. Okay. I see. You are asking a general question was I
13 asked to opine on that, yes, I was. Yeah.

14 Q. And specifically did you respond to Mr. de la Inglesia's
15 position on the technical benefits of the asserted patents?

16 A. I did, yes.

03:13 17 Q. In your experience, what's a reliable way to understand
18 the technical contribution that a patent has in a particular
19 field?

20 A. Well, a key issue that one wants to do is to find out
21 what is the incremental benefit that relates from -- to the
22 patent. So that means you need to understand what other
23 systems already do, and then see what is the additional
24 benefits that would result from the use of the patents, and I
25 tried to capture that here.

03:13 1 Q. Okay. So since we want to learn about the already
2 existing technology, can we talk about some of the things that
3 Headwater agrees it did not invent?

4 A. Yes, let's do that, yeah.

5 Q. Did Headwater invent aggregated push messaging?

6 A. They did not, no.

7 Q. And how do we know that?

8 A. Well, I know from my own review of the, you know, prior
9 art, but also Dr. Raleigh in -- you know, agreed with that
10 during this trial.

03:14 11 Q. Now, did Headwater invent network message servers?

12 A. Again, they did not.

13 Q. And how do we know that?

14 A. Well, I know it from my own experience, but also Mr. de
15 la Inglesia agreed with that during the trial.

16 Q. Did Headwater invent device messaging agents?

17 A. They did not, no.

18 Q. And how do we know that?

19 A. Similar reasons. My experience, but also Mr. de la
20 Inglesia agreeing to that.

03:14 21 Q. Did Headwater invent centralized servers?

22 A. No, they did not.

23 Q. And how do we know that?

24 A. Well, one reason, you know, that we have a prior art
25 reference to a patent by Lee which disclosed a centralized

1 server in a push message system, and Mr. de la Inglesia did
2 not dispute that that was prior art.

3 Q. When you mention Lee, is that DTX 2?

4 A. That's right, yes.

03:15 5 Q. And what specifically did the Lee reference disclose back
6 in 2008?

7 A. 2008, yes. So there's a figure there where you see a
8 central message service and the various other elements, but
9 let's -- I've highlighted some text. So we show it talks
10 about providing push data to a push service application and
11 then that information being delivered to a specific mobile
12 terminal.

03:15 13 Q. And do we have -- according to Lee, do we have a
14 plurality of push servers, 10, 12, and 14 on the left there?

15 A. Yes, we do, yes.

16 Q. And then does Lee tell us how the data got to the right
17 application?

18 A. Yes, that's right. So sort of at the bottom of the left
19 there, I highlight the text where he refers to the use of an
03:16 20 application ID to specify where the message should be

21 delivered.

22 Q. And does Headwater also not dispute that application IDs
23 were something that came before their patents?

24 A. They did not, no. That's right.

25 Q. And does Headwater agree it didn't invent the secure

1 communications SSL and TLS that are used to connect the
2 accused features?

3 A. That's right, yes.

03:16 4 Q. Now, with all that in mind, what does Headwater say
5 provides the benefit of the patents?

6 A. Well, Mr. de la Inglesia, you know, asserted that they
7 provide the benefit of using aggregated push messaging to send
8 messages to devices from a message server.

9 Q. Based on what we've seen from Headwater's admissions and
10 from what already existed, was there any benefit to these
11 patents over what was already out there?

03:17 12 A. I don't see any benefit, no.

13 Q. So what did -- did Mr. de la Inglesia provide a
14 comparison between a secure push messaging versus polling?

15 A. He did, yes.

16 Q. And was that a reliable comparison to measure the
17 benefits of the asserted patents?

03:17 18 A. Yes. So the comparison he was performing here was
19 concerning the battery savings obtained by using push
20 messaging versus polling, and, you know, I have several
21 concerns about this comparison. But is that -- well, they
22 were already push messaging systems around there. So
23 comparing against a polling-based system was an
24 unreliable -- was not a reasonable thing to do when you want
03:18 25 to determine the benefits delivered by the specific patents.

Shawn M. McRoberts, RMR, CRR
Federal Official Court Reporter

1 Q. And is what you're explaining here graphically depicted
2 on slide 144?

3 A. Yes. Yes. So here we show, you know, on the left the
4 comparison he did comparing against a polling technology which
5 probably people wouldn't want to use, and then on the -- in
6 the right what he should have been comparing against which was
7 against existing push technology.

03:18

8 Q. And do we have plenty of existing push technology
9 predating Headwater's inventions?

10 A. Yeah. Of course we have the GtalkService we've heard
11 about but there are also other systems that -- or publications
12 that described these ideas. For example, here's a patent
13 issued to a Mr. Herzog in 2007 which describes basically
14 aggregated push messaging.

03:19

15 Q. And was the Herzog reference DTX 24?

16 A. That's right, yes.

17 Q. And what's the title up there of the Herzog patent?

18 A. It says, "Secure push and status communication between
19 client and server."

20 Q. And this patent was filed back in 2007. Do you see that?

21 A. That's right, yes.

22 Q. Now, did Headwater's expert do anything to compare the
23 benefits of the Headwater patents to existing secure push
24 systems like Herzog?

03:19

25 A. Not that I'm aware of, no.

1 Q. And did Headwater's expert do anything to compare the
2 benefits of the patents compared to existing push systems like
3 GtalkServices?

4 A. No. I'm not aware of that comparison.

5 Q. Do you have any other concerns with the approach that
6 Headwater's expert took with his battery savings analysis?

7 A. Well, as -- you know, so another concern of mine relates
03:20 8 to the data that he presents. So, first of all, he's
9 comparing against, as I said, the wrong thing. But then also
10 the sort of quantitative analysis he performs, uses -- uses
11 some data from Google which, you know, is a good thing, but
12 it's data from 2010 regarding the amount of power consumed by
13 doing polling and pushing, and it doesn't -- we don't have a
03:20 14 lot of information about how the experiments were performed;
15 you know, what environment; what devices, I don't think; what,
16 you know, communications were occurring.

17 Q. And, again, was this data representing a comparison of
18 pushing versus polling?

19 A. No. This is -- yeah. So this is pushing; this is
20 polling. That's right.

21 Q. Did Mr. de la Inglesia conduct any analysis to look how
22 much battery life a pre-existing push system would have used?

03:21 23 A. No, he did not.

24 Q. You understand that Mr. de la Inglesia says that the .5
25 number here he used is consistent with some of the power

1 saving profiles from more recent Samsung devices?

2 A. I understand he said that, yes.

3 Q. Now, and did he provide any reason why he wouldn't have
4 used the numbers associated with the more recent devices as
5 opposed to this number from 15 years ago?

6 A. No, he did not.

03:22 7 Q. Did you do any search on your own to find more recent
8 data on the cost of these days of this polling method?

9 A. Yeah. So I was -- I just had one number, and so I wanted
10 to see what other, you know, studies people might have done.

11 So I did a search for published scientific papers that
12 attempted similar comparisons, and I found one by a group
03:22 13 maybe in Spain from 2015, I think it was, that performed what
14 seemed to be a similar study. They provided a lot more
15 details, but it was hard -- I didn't know enough about the
16 Google study to compare.

17 THE COURT: Just a minute, Dr. Foster.

18 Yes, Mr. Fenster?

19 MR. FENSTER: Objection, Your Honor. I believe this
20 was excluded this morning in chambers. This was the
21 DDX -- what they offered as a learned treatise.

03:22 22 THE COURT: It was. You need to pull this slide
23 down.

24 MR. THOMPSON: This is not that slide, sir. That
25 slide is gone.

1 THE COURT: It looks like that slide.

2 MR. THOMPSON: I haven't put up any slide that was
3 excluded this morning, Your Honor. This slide is a Google
4 document that is a Plaintiff's exhibit.

5 MR. FENSTER: Your Honor, Dr. Foster just testified
6 to that same material and -- which was excluded.

7 THE COURT: The demonstrative was excluded. It
03:23 8 references PTX 91. PTX 91 is a pre-admitted exhibit. If you
9 want to show the witness PTX 91, that's fine. But this
10 demonstrative slide the Court has struck, and you need to pull
11 it down, counsel.

12 MR. FENSTER: And, Your Honor, we move to strike
13 Dr. Foster's testimony regarding the same as that was also
14 excluded.

15 MR. THOMPSON: Your Honor, may I speak for a moment?

16 I believe that we have a disconnect here. That slide I
17 do not understand to have been stricken this morning. It was
03:23 18 a slide that followed that one. On that slide, it contains a
19 PTX which the Plaintiff has put up many times since we've been
20 here. And I'm happy to ask Mr. Fenster if he shares that
21 agreement, that this particular demonstrative was not
22 stricken.

23 THE COURT: All right. Just to be sure, do you have
24 the accompanying demonstrative?

03:24 25 MR. THOMPSON: I do. I have it on a computer, sir.

1 THE COURT: I see that you do. Do you have it on a
2 piece of paper?

3 MR. THOMPSON: Yes, sir.

4 THE COURT: All right. Approach the bench, please,
5 counsel.

6 (The following was had outside the hearing of the
7 jury.)

8 MR. THOMPSON: I understand that --

9 THE COURT: Let me see. Let me see.

03:24

10 MR. THOMPSON: This is the slide I understand to
11 have been excluded, and I will not be putting that up.

12 THE COURT: You know, Mr. Thompson, if you're going
13 to argue with me, you're going to end up on the short end of
14 the stick. I've told you a couple of times to do things and
15 you just want to argue with me.

16 MR. THOMPSON: I'm sorry.

17 THE COURT: Now, I'm not saying I'm perfect and I
18 may get something wrong. But as long as I'm at this bench,
19 you don't argue with me in front of the jury.

20 MR. THOMPSON: Yes, sir. I apologize. It was not
21 my intent.

22 THE COURT: It was clearly that way to me.

23 MR. THOMPSON: My apologies, sir.

24 THE COURT: And another thing. We don't need any
25 comments about what your grandmother pays you for mowing the

03:25

1 grass. These kind of cute sidebar comments are totally
2 inappropriate, and I've let it slide so far. But if you
3 continue to insert them into your examination, I'm going to
4 call you out on it in front of the jury.

5 MR. THOMPSON: Understood, Your Honor.

6 THE COURT: Okay?

7 MR. THOMPSON: Understood.

8 THE COURT: Mr. Fenster, have you seen these?

9 MR. FENSTER: I have, Your Honor. And what we're
10 objecting to is his quotation from the learned treatise. So
11 they took this --

12 THE COURT: This is the slide I remember.

13 MR. FENSTER: That is the slide.

14 THE COURT: This slide was stricken, and we all
15 agree with that?

16 MR. FENSTER: Yes, sir.

17 MR. THOMPSON: Yes, Your Honor.

03:25

18 THE COURT: And then he just said, "So I wanted to
19 see what other studies people might have done and I did a
20 search."

21 MR. FENSTER: So this is the part that I'm looking
22 to strike because that was stricken, Your Honor. He's
23 quoting --

24 THE COURT: Let me see it.

25 MR. FENSTER: Yes, Your Honor. He's -- my

1 understanding of his testimony is he was quoting this.

2 THE COURT: All right. Give me a line number where
3 you believe it starts.

4 MR. FENSTER: I believe it's right here, Your Honor.
5 "So I wanted to see what other studies people might have done,
03:26 6 and I did a search for other scientific papers." That's the
7 portion.

8 MR. THOMPSON: May I address that, Your Honor?

9 THE COURT: You may.

10 MR. THOMPSON: My understanding is that the
11 demonstrative itself was stricken based on hearsay grounds. I
12 believe experts can rely on hearsay for purposes of their
13 analysis. And so I have no intention of putting the slide up.
03:26 14 My understanding was that nothing was going to preclude
15 Dr. Foster from explaining his opinions that are in his report
16 and the data he found.

17 MR. FENSTER: My understanding is that he's
18 repeating the hearsay that was stricken.

19 THE COURT: Well, it's clear experts can and do rely
03:27 20 on hearsay. It's also clear that expert testimony is not to
21 parrot improper hearsay even though the expert may rely on it.
22 And there's sometimes a fine line between the expert
23 explaining what he relied on and parroting hearsay.

24 If he had purported to quote any of this table, that I
25 would strike because this is the basis of why I excluded this

1 demonstrative this morning. I don't see that that applies to
03:27 2 3.146, that demonstrative that's been shown to the jury.

3 MR. FENSTER: This -- his testimony about this is
4 certainly fine. What I was objecting to is his testifying as
5 to what he found in the hearsay studies as a comparison to
6 undermine that.

7 THE COURT: All right. I'll be honest with you, Mr.
8 Fenster. I think if I make a big deal out of it, it's going
9 to make it worse than if we just go on.

03:28 10 You can use this slide, Mr. Thompson. I don't want to
11 see this slide in front of the jury.

12 MR. THOMPSON: Yes, sir.

13 THE COURT: All right? Let's proceed.

14 MR. FENSTER: Thank you.

15 MR. THOMPSON: Thank you.

16 (The following was had in the presence and hearing
17 of the jury.)

18 THE COURT: All right. I think we've got that
19 straight.

20 Let's proceed, counsel.

21 MR. THOMPSON: Can we have the slides back up, Mr.
22 Andryszak? Thank you.

23 Q. (BY MR. THOMPSON) Now, did you look for any additional
03:28 24 data to verify or check on the accuracy of the .5 number that
25 was used by Plaintiff's expert?

1 A. So as I was indicating, I did, you know, search the
2 literature to see if other people had performed what might be
3 similar studies.

4 Q. And did you find drastically lower numbers in your
5 research?

6 A. You know, I found one study that seemed to point to quite
7 different numbers.

03:29 8 MR. FENSTER: Objection, Your Honor.

9 THE COURT: State your objection.

10 MR. FENSTER: Just what we discussed at sidebar,
11 that he's referring to hearsay, Your Honor.

12 THE COURT: He's an expert witness. He's entitled
13 to rely on hearsay as a part of forming his opinions. He can
14 explain the basis for his opinions in his testimony.

15 He cannot use his testimony as a mere conduit to parrot
16 hearsay statements. At this point and given the statements
03:29 17 he's made, I don't find that it rises to that level and I'll
18 overrule your objection.

19 Let's continue.

20 Q. (BY MR. THOMPSON) Dr. Foster, if Headwater's expert had
21 applied the number that you found in additional literature,
22 how would that have affected the outcome of his analysis?

23 A. That would have greatly reduced the -- you know, the
03:30 24 apparent battery savings from not using polling.

25 Q. Now, Dr. Foster, were you also asked to determine whether

1 certain licenses that Samsung has with other patent owners
2 were technically comparable to the patents and technology
3 here?

4 A. I was.

5 Q. And do you have a general sense as to what is the purpose
6 of that analysis?

03:30

7 A. My general understanding is I believe that, you know,
8 this is not something I'm engaged in at all, but there is
9 maybe an attempt to determine the potential values of patents
10 by -- the patents at stake here by comparing them to basically
11 payments made for other people for potentially similar
12 patents.

03:31

13 Q. And can you start by telling us about some of the
14 patented technology that Samsung licensed from a company
15 called Seven Networks?

03:31

16 A. Yes. So I was informed that I was asked to review a set
17 of patents from Seven Networks. I just show a few of them
18 here. And these were, you know, concerned with things like
19 improving battery performance, optimizing network and
20 application traffic. So certainly they were in the same
21 general field of mobile communication device management as
22 we've talked about here.

23 Q. And can you tell us about some of the technology included
24 in patents that were included in Samsung's license to Intel?

25 A. Yes. So these patents were concerned with, again,

1 generally comparable areas, message delivery and messaging
2 networks, and then methods for improving efficiency of
3 communication networks.

03:32

4 Q. Can you now tell us about some of the technology included
5 in Samsung's patent license to R2's patents?

6 A. Yeah. So these are, again, at least generally comparable
7 topics, you know, things like message delivery and the
8 proposal or design for a management server.

9 Q. Can you tell us about some of the technology included in
10 Samsung's patent license to Bell Northern Research's patents?

03:32

11 A. Yes. So the Bell Northern Research patents, which I
12 reviewed, were concerned with managing application network
13 traffic, improving battery performance. So they were
14 certainly at least in the same field of mobile communication
15 device management.

16 Q. So in your opinion, are the licenses that Samsung had
17 with Intel, R2, Seven, and BNR technically comparable to the
18 patents and technology in this case?

03:33

19 A. So I'm not a legal expert, so I'm not exactly sure of the
20 definition of technically comparable. But, you know, from my
21 perspective, they cover areas of technology that are
22 comparable to those covered by the patents.

23 Q. Dr. Foster, did you also consider whether the Headwater
24 patents satisfy the written description requirement of patent
25 law?

1 A. I did, yes.

2 Q. And can you tell us what's the purpose of the written
3 description requirement?

03:33 4 A. Yeah. So the basic idea here, as I understand, is that a
5 provisional patent is filed, which has a -- you know,
6 describes the field of invention, and then the subsequently
7 patents may be submitted, filed, and I guess hopefully
8 approved from the perspective of the patent owner that make
9 specific claims that are intended to derive from the field of
10 the patent.

03:34 11 And so the goal here is to make sure that the claims do
12 not reach beyond what is described in the patent
13 specification.

14 Q. And were you provided with the legal standard that talks
15 about written description and its purpose?

16 A. I was, yes.

17 Q. And what is the purpose according to your slide here?

18 A. Yes. So I was very specific actually. So the scope of
19 the patentee's right to exclude others from using the
03:34 20 invention that does not overreach the scope of the inventor's
21 contribution to the field as defined in the -- as described in
22 the patent specification.

23 Q. And so is the written description requirement one way to
24 prevent a patent owner from putting an invention into their
25 claims that was not actually adequately described in the

1 specification?

2 A. That's my understanding, yes.

3 THE COURT: Mr. Thompson, I'm going to ask you again
4 not to lead the witness. You just laid it all out there and
5 all he had to say was yes. He's supposed to be testifying.
03:35 6 You're not supposed to be testifying. Okay?

7 MR. THOMPSON: Yes, sir, Your Honor.

8 THE COURT: Ask him non-leading questions. I assume
9 you know how to do that.

10 MR. THOMPSON: Yes, sir.

11 THE COURT: Okay. Let's do it.

12 Q. (BY MR. THOMPSON) If a patent does not satisfy the
13 written description requirement, what is the result?

14 A. My understanding is such a patent would be invalid.

15 Q. If a patent owner files subsequent patents related to an
03:35 16 earlier application, can they modify the claims?

17 A. Well, my understanding is each new patent can have
18 different claims.

19 Q. And can they change the title and the abstract as well?

20 A. Yeah. So the title and abstract can be -- can be quite
21 different.

22 Q. Do those new claims have to be supported by the detailed
23 description in the patent?

24 A. That's my understanding, yes.

03:36 25 Q. What are the two terms we see on the slide here,

1 Dr. Foster?

2 A. Yes. So this is by now familiar, claim 1 of the '117
3 Patent which talks about a network message server receiving
4 requests from application servers.

5 Q. And do these appear in the claims of the '117 Patent?

6 A. That's right, yes.

7 Q. Do those terms appear in the detailed description of the
8 '117 Patent?

9 A. No, I could not find them there. I did a search and
03:36 10 neither of them occur at all, not even once.

11 Q. When were those -- those specific terms network message
12 servers, application server, first added to the '117 Patent?

13 A. Well, the '117 Patent was released in 2015 so that's when
14 they first were published.

03:37 15 Q. Can we discuss the service control link, Dr. Foster?

16 A. Yes. So -- well, service control link which is, of
17 course, a --

18 THE COURT: Dr. Foster, let him ask a question. He
19 asked, can we discuss it.

20 THE WITNESS: Excuse me.

21 THE COURT: He's asking you a question.

22 Go ahead, counsel.

23 THE WITNESS: Please.

24 Q. (BY MR. THOMPSON) Can you remind us how the service
25 control link was described in the Headwater patents?

1 A. Yes. So I show here a description that talks about a
03:37 2 unique secure communication link establishing a pairing
3 between two ends of a service control link so that the service
4 controllers that use that link can only control the device
5 associated -- the devices associated with the correct service
6 provider -- service profiles.

7 Q. At the time of the Headwater patents and the original
03:38 8 application back in 2009, was a persistent push connection
9 something that was unique?

10 A. No, it was not.

11 Q. Does the Headwater patent provide sufficient written
12 description for a secure -- a service control link that is a
13 push -- a persistent push link?

14 A. No, it does not, no.

15 MR. THOMPSON: Your Honor, I pass the witness.

16 THE COURT: All right. Thank you, counsel.

03:38 17 Ladies and gentlemen, we've been back from lunch for a
18 length of time. We're going to take a short recess. If you
19 will, leave your notebooks closed in your chairs, follow all
20 my instructions about your conduct, and we'll be back shortly
21 to continue. I'm going to try to keep this to approximately
22 10 minutes.

23 The members of the jury are excused for recess.

24 (Whereupon, the jury left the courtroom.)

03:39 25 THE COURT: All right. The Court stands in recess.

1 (Brief recess.)

2 THE COURT: Be seated, please.

03:52 3 It's a good thing we grow pine trees in East Texas. All
4 right. Are you prepared to cross the witness, Mr. Fenster?

5 MR. FENSTER: Yes, yes, Your Honor.

6 THE COURT: All right. You may go to the podium.

7 And let's bring in the jury, please.

8 (Whereupon, the jury entered the courtroom.)

03:53 9 THE COURT: Please have a seat, ladies and
10 gentlemen. We'll proceed with the Plaintiff's cross
11 examination of Dr. Ian Foster.

12 Mr. Fenster, you may proceed.

13 MR. FENSTER: And, Your Honor, may I have leave to
14 use the boards throughout my examination?

03:53 15 THE COURT: Yes, you may. I'm impressed you could
03:53 16 make that slide in between there. A lot of lawyers couldn't
17 do that.

18 MR. FENSTER: Only because I didn't have lunch.

19 THE COURT: All right. Go ahead.

20 CROSS EXAMINATION

21 BY MR. FENSTER:

22 Q. Good afternoon, Dr. Foster. My name is Marc Fenster. We
23 haven't had the pleasure of meeting. It's nice to meet you.

24 A. Thank you. Good afternoon.

25 Q. Dr. Foster, you have been hired as an expert witness. Is

1 that correct?

2 A. I have, yes.

3 Q. And you've been hired by Samsung's lawyers. Correct?

4 A. That's correct.

5 Q. And you're being paid for your work in this case.

6 Correct?

7 A. That's correct.

8 Q. Now, you mentioned on direct that you don't have any

03:54 9 patents of your own. Correct?

10 A. That's correct.

11 Q. You've never been awarded a patent?

12 A. I've never applied for one, no.

13 Q. So you've never interacted with the patent office?

14 A. Not directly, no.

15 Q. And so you've never had -- you don't have any experience

16 of dealing with the back and forth that a patent inventor goes

17 through with the examiner in order to get --

18 A. Not direct --

19 Q. -- a United States issued patent. Is that correct?

20 A. Not directly, no.

03:54 21 Q. And you don't consider yourself an expert in patent law.

22 Correct?

23 A. I do not, no.

24 Q. You're not an expert in claim construction. Correct?

25 A. I'm not.

1 Q. And you relied entirely on Samsung's lawyers to tell you
2 what standards to apply when you were doing your construction,
3 infringement, and validity analysis. Fair?

4 A. That's correct, yes.

03:55

5 Q. Let's start with your validity opinion and pick up where
6 you left off, which was the written description. Do you
7 recall that?

8 A. I do.

9 Q. Now, you know that United States patents are presumed to
10 be valid. Correct?

11 A. That's my understanding, yes.

12 Q. And they are presumed to be valid because a United States
13 examiner at the Patent Office carefully examined the
14 application and compared it to all of the requirements before
15 issuing the patent. You understand that?

16 A. I do.

03:55

17 Q. And because of that, you and Samsung have the burden of
18 proving by clear and convincing evidence that the patent is
19 invalid. Correct?

20 A. That's my understanding, yes.

21 Q. Now, you've testified in a few cases but not that many.
22 Is that correct?

23 A. That's correct, yes.

24 Q. And in your experience, this patent, this is -- you would
25 agree that this is a pretty healthy specification, wouldn't

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1 you?

03:56

2 A. I'm not sure what the word 'healthy' means with respect
3 to specifications.

4 Q. I mean detailed and long.

5 A. It's certainly long, yes.

6 Q. Okay. And you understand that the Patent Office, the
7 examiner, carefully examined this specification and compared
8 it to the claims and determined that it met all the
9 requirements, including the written description requirement.

10 Correct?

11 A. That's my understanding of what that was supposed to have
12 done, yes.

03:56

13 Q. And you testified that the network manage -- excuse me,
14 network message server only appeared in the claims. Correct?

15 A. That's what I said, in the claims and the abstract, yes.

16 Q. Okay. Now, the written description is determined from a
17 person of ordinary skill in the art reading the specification.

18 Correct?

19 A. That's my understanding, yes.

03:57

20 Q. And one of skill in the art would understand that the
21 network message server could be used -- could be referred to
22 with other words like service controller that are described
23 quite extensively in the specification. Correct?

24 A. We'd have to, I think, look at some specific wording in
25 the written description to see whether it really could be

1 interpreted as meaning a network message server, given the
2 network message server has to do some very specific things.

03:58

3 Q. Okay. And you said that service control link, that was
4 another example that you gave and you said that there was no
5 written description for that being -- carrying data as well.
6 Is that correct?

7 A. I did say that, I believe, yeah.

8 Q. You know, however, that the specification describes that
9 service control link is described as being a standard TCP
10 connection. Correct?

11 A. I believe that's right, yes.

12 Q. And you understand that a standard TCP connection is
13 known to carry both data and control. Correct?

03:58

14 A. Well, a TCP connection can be used for various purposes.
15 It can be used only for control, only for data, or for both,
16 yes.

17 Q. Okay. Let's talk about your invalidity argument with
18 respect to Gtalk. Is that all right?

19 A. Yes.

03:58

20 Q. Okay. Now, the very specific GtalkService that you're
21 talking about as being invalidating is the one that was
22 included in September 2008 that was actually included on the
23 commercially-released G1 device. Correct?

24 A. Yes, that's correct.

25 Q. Okay. There were some previous pre-releases that were

1 different. Correct?

2 A. Yeah, there were a series of pre-releases which
3 presumably became more sophisticated over time for the most
4 part.

03:59

5 Q. And you agree that it's improper to rely on more than one
6 version in doing your invalidity analysis for anticipation.
7 Correct?

8 A. Well, I think we -- what I was seeking to evaluate was
9 the GtalkService as it was released, as you said, and there
10 were various pieces of evidence that I had available to me to
11 determine its properties. And so there was a lot of
12 documentation, there were some, you know, later reports, and
13 then, of course, there was some source code. And the source
14 code did come from several versions of the system.

03:59

15 Q. You understand that the pre-release version that there
16 was -- that the pre-release version functionality was removed
17 from the G1 service except as to Google. Correct?

18 A. My understanding is that nothing was removed from -- I
19 think you're asking here particularly about the ability to
20 deliver messages, and I don't believe -- I don't have anything
21 to make me think that was removed. It was not -- access to it
22 was not provided, as I understand, to external applications.

04:00

23 Q. Okay. We'll come back to that.

24 So you agree that for anticipation, you have to show by
25 clear and convincing evidence that every single element is

1 here from the claim was present in that G1 device. Correct?

2 A. That's my understanding, yes.

04:00 3 Q. Okay. And one of the important elements here is a secure
4 interprocess communication service.

5 A. Yes.

6 Q. Right?

7 And you understand that you have to prove by clear and
8 convincing evidence in order to make this patent invalid that
9 the 2008 version that was released on the G1 had a secure
10 interprocess communication service. Correct?

11 A. That's -- I understand that, yes.

04:01 12 Q. Now, you gave testimony that you believed that the patent
13 was invalid only under what your version or understanding of
14 what Headwater's interpretation but not the proper
15 interpretation. Fair?

16 A. That's correct, yes.

17 Q. So you agree that applying the claims properly, the
18 G1 -- I'm sorry. The GtalkService in 2008 does not invalidate
19 either the '117 Patent or the '733 Patent. Correct?

04:01 20 A. Yeah. What I stated was that what I viewed as the
21 correct understanding of the claims, neither the GtalkService
22 nor the subsequent Google messaging services infringed on the
23 claims. I think that's what you just said.

04:02 24 Q. No. Dr. Foster, my question is, you agree that under the
25 proper construction, proper application of this claim, that

1 the 2008 GtalkService did not have a secure interprocess
2 communication. Correct?

04:02

3 A. I'm trying to make sure I've got the right versions in my
4 head. The -- let's see. So it's hard to see here. Can we
5 get this up on the board by the way?

6 THE COURT: If you need to stand up to see --

7 THE WITNESS: I could. I could. Yes, good idea. I
8 hadn't thought of that.

9 Okay --

04:03

10 Q. (BY MR. FENSTER) You agree, Dr. Foster, that under your
11 interpretation, the correct interpretation of the claim, the
12 prior art GtalkService did not have a secure interprocess
13 communication. Correct?

14 A. Well, let's see. Let's see if I can make sure I have
15 this clear in my head. So I said if the --

16 THE COURT: Why don't you sit down, Dr. Foster, so
17 we can have the benefit of --

18 THE WITNESS: Excuse me, yes. So if we -- I said
19 under Headwater's interpretation -- I'm trying to get the
20 things straight in my head here. Under Headwater's
21 interpretation in which a -- we needed to have a -- oh, that's
22 right. No, I agree with you, yes. That's right.

04:03

23 Q. (BY MR. FENSTER) You agree that under the proper
24 interpretation, the prior art GtalkService does not invalidate
25 claim 1 of the '117 Patent. Correct?

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04:04 1 A. Let's see. Well, that's a bit -- now you're asking a
2 different question, I think. You are asking under the proper
3 interpretation, does claim 1 not invalidate. Okay. And
4 you're doing it on the basis that it doesn't have a secure
5 interprocess communication service.

04:04 6 I think my objection to this previously was related to
7 the delivery to a software process based on the application
8 identifier, which I viewed was not supported by the
9 GtalkService.

10 Talk to me.

11 Q. (BY MR. FENSTER) Dr. Foster, I'm sorry. I did not
12 understand your answer.

13 THE COURT: Just ask a question. And if the
14 response is responsive, wonderful; if it's not, you have the
15 right to object.

16 MR. FENSTER: Thank you, Your Honor.

17 THE COURT: Let's follow the rules.

04:05 18 Q. (BY MR. FENSTER) Dr. Foster, you did not offer today any
19 opinion that the GtalkService prior art -- the prior art
20 GtalkService invalidates either of the claims under the proper
21 interpretation of the claims. Correct?

22 A. That is correct, yes.

23 Q. Okay. You only offered an interpretation under
24 your -- you only offered an opinion under your interpretation
25 of what you think Headwater's view is. Correct?

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1 A. That's correct, yes.

04:05

2 Q. Now, you understand that to prove invalidity, it has to
3 be by clear and convincing evidence. Correct?

4 A. That's correct, yes.

5 Q. You can't just say it; you have to prove it. Right?

6 A. Uh-huh. Sorry. Yes.

7 Q. Source code is evidence. Right?

8 A. Source code I understand is one source of evidence, yes.

9 Q. Technical documents, that could be evidence. Right?

10 A. Yes.

11 Q. Okay. And if you fail to show any element from the 2008

04:06

12 GtalkService, then Samsung has not carried its burden of
13 proving these claims invalid. Correct?

14 A. That's my understanding, yes.

15 Q. Now, you agree that the 2008 GtalkService used an
16 implicit intent. Correct?

04:06

17 A. I do not agree. I can expand on that if you'd like.

18 THE COURT: He'll ask the questions.

19 THE WITNESS: Excuse me. Yes.

20 Q. (BY MR. FENSTER) Now, you heard Mr. Hansen testify that
21 the 2008 GtalkService did not have setPackage. Correct?

22 A. That's correct.

23 Q. Instead, it used something called an action name.
24 Correct?

25 A. That's correct.

04:07 1 Q. And that action name could be read by any application.
2 Correct?

3 A. Well, any intent metadata could be read by any
4 application, but the question of who receives it depends on
5 whether it matches with that metadata.

6 Q. Okay. And if --

04:07 7 MR. FENSTER: Now, if we can bring up JX 50. And if
8 you could blow up the overview section and the title Implicit
9 Intent Hijacking?

10 Q. (BY MR. FENSTER) You understand that JX 50 is a Google
11 document explaining that implicit intents are vulnerable and
12 subject to an insecurity known as implicit intent hijacking.
13 Correct?

14 A. I do.

04:08 15 MR. FENSTER: And if you go down to mitigations, Mr.
16 Mahon.

17 Q. (BY MR. FENSTER) It says, "Unless the application
18 requires it, make intents explicit by calling
19 setPackage." Correct?

20 A. I see that, yes.

21 Q. And it says, "This allows the intent to be interpreted
22 only by a specific component preventing untrusted applications
23 from intercepting the data sent along with the intent."
24 Correct?

25 A. I see that, yes.

04:08 1 Q. Okay. And you understand that the accused products, the
2 FCM system and the SPP system, both use setPackage and an
3 explicit intent. Correct?

4 A. Sorry. Say that again?

5 Q. You agree that both the accused systems, Samsung Push
6 Platform and Google's FCM, both use setPackage. Correct?

7 A. They do. That's right.

8 Q. And they use an explicit intent that you agree is a
9 secure interprocess communication. Correct?

04:09 10 A. Yes, that's right. So the term 'explicit' intent refers
11 to an intent that has got enough information that can only map
12 to one application, which in this case is done using
13 setPackage.

14 Q. And you heard Mr. Hansen testify that setPackage and
15 explicit intent was not available in the prior to 2009, the
16 priority date here. Correct?

17 A. That's right. Before that, you could provide a package
04:09 18 name via another mechanism as he also described.

19 Q. Okay. And specifically it specified -- strike that.
20 Specifically the old system, the prior art system that
21 you rely on, used an intent that specified an action name.
22 Correct?

23 A. That is correct.

04:10 24 MR. FENSTER: And if we could bring up DDX 3.109.

25 Q. (BY MR. FENSTER) Okay. And this is the intent that you

1 agree was used in the original -- in the prior art,
2 GtalkService. Correct?

3 A. Well, this describes an intent and it describes at the
4 point -- at the time the only field that you could use to
5 specify who should receive it which was action and therefore,
04:10 6 of course, one had to encode what one wanted in that in order
7 to ensure the intent was explicit, or if you didn't want to do
8 that, allow it to be implicit.

9 Q. Dr. Foster, the only intent that could be specified in
10 the Gtalk prior art system was action. Correct?

11 A. Well, this is a method for creating an intent. I think
12 what you're saying, the only field that you could use to
04:11 13 provide information that could determine who received the
14 message was that one called action.

15 Q. Okay. And action is described in JX 9 as the general
16 action to be performed. Correct?

17 A. That's what it says here. As we saw earlier, there is
18 additional information further below.

04:11 19 Q. And you have testified that one could populate the action
20 field with a package name. I think that's your theory?

21 A. Well, it's not a theory; it's what the documentation says
22 and it also advises. When you provide intent later on, you
23 are advised to use setPackage. Here you are advised to
24 provide the package name and the action, the same thing in
25 both cases.

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04:12 1 Q. Dr. Foster, neither you nor Mr. Hansen showed the jury
2 any document showing that package name had actually been
3 populated and used as an action -- as the action in a prior
4 art system. Correct?

5 A. I don't -- I believe that's correct, yes.

04:12 6 Q. And you have not provided any documentation and neither
7 did Mr. Hansen showing that prior art Gtalk used anything
8 other than an implicit intent. Correct?

9 A. Well, what I have provided and Mr. Hansen also provided
10 was documentation that clearly said you should
11 provide -- use -- provide the package name in an action. So
12 we did not provide, as you said, code that shows someone doing
13 it, but we provided documentation showing -- recommending
14 action advising you to do it.

04:13 15 Q. You did not show a single example, any document showing a
16 single example that anyone had actually done -- made an action
17 identified as the package name prior to 2009. Correct?

18 A. I don't believe so, no.

04:13 19 Q. And even if that had been done, an action intent that was
20 used in the prior art could be interpreted by any of the
21 Google apps that had that package name. Correct?

22 A. This is the same as -- so I believe there's a
23 misunderstanding as to the -- how the intent matching system
24 works. It matches against the metadata, which package name is
25 provided. It will restrict based on that package name. Of

1 course, if someone doesn't provide a package name, then they
2 won't meet that restriction.

3 MR. FENSTER: Objection, Your Honor; non-responsive.

04:14 4 THE COURT: Sustained.

5 MR. FENSTER: Move to strike.

6 THE COURT: Granted.

7 Either ask the same question again or move on.

8 Q. (BY MR. FENSTER) Now --

9 THE COURT: Dr. Foster, your responses need to be
10 tailored to the question asked and they need to stay within
11 the scope of the question asked.

12 THE WITNESS: I understand.

13 THE COURT: All right. Thank you, sir.

04:14 14 Q. (BY MR. FENSTER) Now, another one of the elements is
15 that -- of claim 1 is that the network message server be
16 configured to receive from each of a plurality of network
17 application servers a request. Correct?

18 A. That's correct.

19 Q. Now, you did not show the jury any documentation that the
20 prior art system, because it was only Google, could receive
04:15 21 requests from a plurality of application servers. Fair?

22 A. Well, I believe I provided the history of if the FCM
23 system that talked about multiple application servers, if I
24 recall correctly.

25 Q. You did not show the jury any documentation showing that

04:15 1 the prior art Gtalk received applications from a plurality of
2 app servers. Correct?

3 A. I don't want to be non-responsive, but I suggested that
4 the document I proposed provided that information, that I
5 presented provided that information. Could we look at it
6 perhaps?

7 Q. The request that is received from each has to indicate a
04:16 8 corresponding device and a plurality -- and an application.
9 Correct? So each request that's received has to indicate a
10 corresponding one of a device and an application. Right?

11 THE COURT: Feel free to stand up if you need to --

12 THE WITNESS: Sorry, sorry, sorry. I
13 should -- excuse me. Could you repeat the question and I'll
14 get it this time, I bet.

04:17 15 Q. (BY MR. FENSTER) Element 1[d] requires that the request
16 indicate a corresponding one of a device and an application?

17 A. Yes, that's right.

18 Q. Okay. And for the FCM system, that request includes an
19 FCM token. Do you recall that?

20 A. I do.

04:17 21 Q. And that FCM token, you agree, does indicate both the
22 application and the device. Correct?

23 A. That's correct.

24 Q. And you have provided no documentation or no -- and no
25 testimony that the request received by the prior art Gtalk

1 included an FCM token. Correct?

2 A. No. I pointed at XMPP documentation that shows how the
3 device is specified.

04:17 4 MR. FENSTER: Objection; non-responsive, Your Honor.

5 THE COURT: Overruled. I think he's responding to
6 your question there.

7 Q. (BY MR. FENSTER) Now, the GtalkServices --

8 MR. FENSTER: Actually, let's go PTX 335, please.

04:18 9 So if we can go to the bottom of page 4 where it says "removed
10 functionality." And then if you go to page 5 and blow up the
11 second bullet point, "Due to."

12 Q. (BY MR. FENSTER) It says, "Due to the security risks
13 inherent in accepting arbitrary data from outside the device,
14 the data messaging facility of the GtalkService will not be
15 present in Android 1.0." Correct?

16 A. I see that, yes.

04:19 17 Q. And it provided that the GtalkService would only provide
18 connectivity to the Google servers. Correct?

19 A. Well, it goes on -- it says provide connectivity for
20 Google services for Google talk instant messaging.

21 Q. Thank you.

22 A. Yeah.

23 Q. Now, that code, the GtalkService code that was included
04:19 24 in 1.0 -- strike that.

25 The GtalkService that was used in connection with Android

1 1.0, you heard from Mr. Hansen was closed source and
2 non-public. Correct?

3 A. I did, yes.

04:19 4 Q. And for the '733 Patent, the claim requires an agent
5 identifier?

6 A. That's right, yes.

7 Q. And you refer to that same action to meet the limitation
8 of agent identifier. Correct?

04:20 9 A. Yes, I said that the -- yes, yeah.

10 Q. And you agree that under the proper interpretation of the
11 claim, the '733 is not invalidated by the prior art Gtalk.
12 Correct?

13 A. That's correct.

14 Q. Okay. And it's only under -- and under what you describe
15 as Headwater's theory, you say that it's the action name that
16 could be populated with the package that is the agent
17 identifier. Correct?

04:21 18 A. That's correct.

19 Q. And this is the action that we saw as described as a
20 general category of action. Correct?

21 A. I disagree.

22 Q. And while you testify that there was -- that that action
23 could have been populated with a package name, you provided no
04:21 24 evidence that that action ever was made into an action name
25 prior to the priority date. Correct?

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1 A. That's correct.

2 Q. Now, you presented no patents or printed publications
04:21 3 describing the prior art GtalkService as having a secure
4 interprocess communication service. Correct?

5 A. That's correct way I ask a -- to make sure I'm saying
6 things correctly. Is a -- does documentation count as a
7 publication?

8 THE COURT: Dr. Foster, you don't get to ask
9 questions. Mr. Thompson's going to get a chance to go back.

04:22 10 THE WITNESS: I understand. Okay.

11 THE COURT: And I'm sure he will address anything
12 you feel like ought to be addressed.

13 THE WITNESS: Thank you.

14 THE COURT: But that's when that will happen, not
15 now.

16 Go ahead, Mr. Fenster.

17 MR. FENSTER: Thank you, Your Honor.

18 Q. (BY MR. FENSTER) Going back to '117 Patent and that
19 secure interprocess communication, the prior art GtalkService
04:22 20 does not perform any mechanism to secure the interprocess
21 communication service. Correct?

22 A. I disagree.

23 Q. In your binder you have before you two cross examination
24 binders.

25 A. Yep.

04:23 1 Q. If you could turn to the first one. And if you could
2 find the tab for the -- your November 7 deposition. And we're
3 referring to page 100, lines 18 through 21.

4 A. Could you give the page number again?

5 Q. 100.

6 A. Thank you.

04:23 7 Q. Will you review that to yourself, please?

8 A. Can you give me the line numbers again, please?

9 Q. 18 to 21.

10 A. I've read it, yes.

04:24 11 Q. Okay. And, Dr. Foster, the GtalkService does not perform
12 any mechanism to secure the interprocess communication
13 service. Correct?

14 A. Yeah. I did that because it was not encrypting the data
15 being transferred, it was not secure.

16 MR. FENSTER: Your Honor, may we publish?

17 THE COURT: You may.

18 Q. (BY MR. FENSTER) You were asked at your deposition, "But
19 GtalkService doesn't perform any mechanism to secure the
20 interprocess communication service. Correct?"

21 And your answer under oath as you are today was, "That's
22 correct, yes."

23 Correct?

24 A. That's correct, yes.

04:25 25 Q. I read that correctly?

1 And so the prior art GtalkService, because it doesn't
2 secure the interprocess communication service, doesn't
3 disclose this claim element under your understanding of what
4 that would require. Correct?

5 A. Umm -- okay. I agree with that.

04:25 6 Q. And you also agree that you haven't identified a
7 setPackage functionality in GtalkService that would secure
8 broadcast in the prior art system. Correct?

9 A. I disagree.

04:25 10 MR. FENSTER: If we can go to JX 37 at page 7,
11 please. And if you could blow up under "security
12 considerations and best practices." And if you could
13 highlight -- if you could break out this portion, please.

04:26 14 Q. (BY MR. FENSTER) And JX 37 provides -- under "security
15 considerations" it says, "Do not broadcast sensitive
16 information using an implicit intent. The information can be
17 read by any app that registers to receive that broadcast."
18 Correct?

19 A. I see that, yes.

20 Q. And it says, "There are three ways to control who can
21 receive your broadcasts." Correct?

22 A. I see that, yes.

04:26 23 Q. And the second bullet point says, "In Android 4.0 and
24 higher, you can specify a package with setPackage." Correct?

25 A. It does.

1 Q. Okay. Now, Android 4.0 and higher was far after the
2 priority date. Correct?

3 A. It was a couple of years after, I think, yeah.

4 Q. And before that you could not secure the intent with
5 setPackage. Correct?

04:27

6 A. The setPackage function did not exist so you could not
7 use it, yes.

8 Q. Now, in addition to your anticipation arguments, you gave
9 two obviousness combinations. You said even if the prior art
10 GtalkService doesn't invalidate on its own, it could be
11 combined with two other references, the WAP and a reference
12 called Kalibjian. Correct?

04:27

13 A. That's right. I believe it's pronounced Kalibjian,
14 but...

15 Q. Thank you.

16 So Dr. Foster, you understand that to prove obviousness
17 you have to show by clear and convincing evidence that it
18 would have been obvious to one of skill in the art to combine
19 those two systems at the time of the priority date. Fair?

20 A. That's my understanding, yes.

04:28

21 Q. And one of the things that you have the burden of proving
22 is showing that a person of ordinary skill in the art would
23 have been motivated to combine those two references, and they
24 would have had a reasonable expectation of success in doing
25 so. Correct?

1 A. That's my understanding, yes.

2 Q. Now, I listened very carefully and I did not -- strike
3 that.

4 You did not mention motivation to combine or reasonable
5 expectation of success when you discussed your obviousness
6 opinions on direct examination. Correct?

7 A. That's correct.

04:29 8 Q. Okay. If we can talk -- if I can move you to -- let's
9 talk about your non-infringement argument.

10 A. Okay.

11 Q. Is that right?

12 Okay. You agree that the only proper comparison for
13 infringement is comparing the accused product to the claims.
14 Correct?

15 A. That's correct, yes.

04:29 16 Q. It's absolutely improper to compare to what you referred
17 to as 'famous figure 16'. Right?

18 A. Yes, that's right.

19 Q. It's improper to compare it to any specific embodiment in
20 the specification. Correct?

21 A. That's correct.

22 Q. There were -- there's been lots of discussion, both by
23 you and by Samsung throughout this trial, about how the
24 specification talks about billing. Do you recall that?

25 A. I do.

04:29 1 Q. Billing is discussed in the specification. Right?

2 A. It is.

3 Q. It does not appear once in either of the -- in any of the

4 asserted claims. Correct?

5 A. That's correct.

6 Q. And so it's completely irrelevant to a proper

7 infringement analysis. Correct?

8 A. I understand, yes.

9 Q. Now, Samsung's lawyers have made the point several times

10 in connection with the specification describing billing that

04:30 11 the specification doesn't mention battery savings. Have you

12 heard them say that?

13 A. I have, yes.

14 Q. And you understand that Mr. McKeon was implying that the

15 asserted patents aren't about battery savings. Correct?

16 A. That is my understanding, yes.

17 Q. Okay. But you agree, as a person of ordinary skill in

18 the art reading these patents and these claims, that the

19 overarching goal of the asserted patents is improving the

04:30 20 battery life of consumer mobile devices by optimizing certain

21 software functionality and preventing needless battery

22 consumption. Correct?

23 A. I disagree.

24 Q. Can you go in your binder to -- this is still in your

25 first one. This is in your rebuttal report. I believe that's

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04:31 1 -- do you have that? It's October 24, Foster rebuttal.

2 THE COURT: Do you mean October 14th?

3 MR. FENSTER: Yes, sir. Yes, Your Honor.

4 THE COURT: Okay.

5 Q. (BY MR. FENSTER) October 14, 2024, foster rebuttal
6 report. Do you have that?

7 A. I do.

8 Q. And if you could turn in your binder -- in that report to
04:31 9 your paragraph 567. And if you could read the first two
04:32 10 sentences of that paragraph to yourself.

11 A. I see that, yes.

12 Q. Dr. Foster, I'm going to ask you again, you agree that
13 the overarching goal of the asserted patents is improving the
14 battery life of consumer mobile devices by optimizing certain
15 software functionality and preventing needless battery
16 consumption. Correct?

17 A. That is what is written there, yes.

18 Q. That's not just what's written there; that's what you
19 wrote there. Correct?

04:32 20 A. I believe, based on my understanding of the arguments
21 being made by Headwater.

22 MR. FENSTER: Can we publish that, please, Your
23 Honor?

24 THE COURT: Yes. You have leave to publish it.
25 That's an equivocal response.

04:33 1 MR. FENSTER: And if you could just -- there we go.

2 Q. (BY MR. FENSTER) You wrote, "Further, it is my opinion

3 that these BNR patents share the same overarching goal of the

4 asserted patents: Improving the battery life of consumer

5 mobile devices by optimizing certain software functionality

6 and preventing needless battery consumption."

7 Correct? Did I read that correctly?

8 A. You did, yes.

9 Q. And that's what you wrote in your report --

04:33 10 A. I did.

11 Q. -- in October of last year. Correct?

12 A. Yeah.

13 Q. Now, you and Mr. de la Inglesia, it seems to me you

14 mentioned a few times that you both -- on direct that you both

15 actually agreed on how the systems work. Fair?

16 A. At a high level, yes.

17 Q. And, in fact, you didn't offer any disputes to the jury

04:34 18 today in direct disputing any opinions that Mr. de la Inglesia

19 gave regarding how the system works or how the source code

20 says it works. Fair? As opposed to how to apply the claim

21 language to those systems. Is that fair?

22 A. I believe -- no, I disagree.

04:34 23 Q. Okay. Now, you agree that both -- there are two accused

24 systems--the Samsung push system and the FCM system. Correct?

25 A. That's correct, yes.

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04:35 1 Q. And you agree that they have essentially the same
2 architecture of two sets of what you call servers--request
3 manager servers and connection manager servers. Correct?

4 A. That's correct.

5 Q. And you agree that they have the same architecture, for
6 all practical purposes, for our infringement analysis.
7 Correct?

8 A. I agree.

9 MR. FENSTER: And if you could bring up DDX 3.42,
10 please.

11 Q. (BY MR. FENSTER) And this is the FCM system. Correct?

04:35 12 A. That is correct, yes.

13 MR. FENSTER: And if you can go to the next slide,
14 3.43.

15 Q. (BY MR. FENSTER) This is the Samsung push system as
16 described in Samsung's own pre-litigation document JX 58.
17 Correct?

18 A. That's correct.

19 Q. And you agree that both have essentially the same
20 components. Correct?

21 A. Yes.

04:36 22 MR. FENSTER: And if you can go to DDX 1.28, please.

23 Q. (BY MR. FENSTER) And, in fact, this was a slide that
24 Mr. McKeon showed in opening statement showing -- describing
25 both Google and Samsung as having the same architecture.

1 Correct?

2 A. That's correct.

3 Q. And you agree that --

04:37

4 MR. FENSTER: If we can go back to -- let's see. Go
5 to DDX 3.44, please.

6 Q. (BY MR. FENSTER) And you described the systems as the
7 same as the accused push systems and described them the same
8 way. Correct?

04:37

9 A. Just to -- when you said you accused the system, you
10 compared the systems against the accused systems.

11 Q. I'm sorry.

12 A. Yeah.

13 Q. Let me rephrase.

14 A. Yeah.

15 Q. You described both accused systems using the same diagram
16 because they have the same architecture. Fair?

17 A. That's correct, yes.

18 Q. Okay.

19 MR. FENSTER: Let's go to JX 58, please, at slide
20 10.

04:37

21 Q. (BY MR. FENSTER) And this is Samsung's own
22 pre-litigation document that the jury has seen many times
23 describing the same system. Correct?

24 A. Yes, it is.

25 Q. Okay. And you understand that they describe the push

1 notification server as everything between these lines.

2 Correct?

3 A. Well, I disagree.

04:38 4 Q. Okay. Dr. Foster, you agree -- so let's just isolate
5 where the parties agree and where they don't agree. Fair?

6 A. Uh-huh.

7 Q. Okay. With respect to -- you have no dispute regarding
8 the element -- the preamble. Correct?

9 A. That's correct.

10 Q. No dispute regarding element 1[a]. Correct?

11 A. That's correct.

04:38 12 Q. With respect to element 1[c], you don't dispute that the
13 hardware that is described within those two dotted lines as
14 part of that push notification server perform all of the
15 elements of 1[c]. Correct?

04:39 16 A. That's correct, yes.

17 Q. Okay. And you don't dispute that the hardware that's
18 described within those two lines of JX 58 as the push
19 notification server perform all of the functions of element
20 1[d]. Correct?

04:40 21 A. Again, let me read it. Yes. So you are asking about the
22 function, not about its characterization as a network. So
23 yes, I agree.

24 Q. Okay. And you agree that the hardware that's described
25 as the push -- within those two lines on JX 58 performs all of

1 the functions of element 1[e]. Correct?

2 A. I agree.

04:40 3 Q. And you agree that that same hardware performs all of the
4 functions of element 1[f]. Correct?

5 A. That's correct.

6 Q. And you do not dispute anything about element 1[g].
7 Correct?

8 A. That's correct.

04:40 9 Q. And with respect to element 1[h], is it correct that
10 today you did not offer any opinion disputing that the accused
11 products meet the secure interprocess communication service?

12 A. That's correct.

13 Q. Okay. Now, Dr. Foster, everything that you agreed that
04:41 14 was met by the elements in Exhibit 58 --

15 A. I realize I misspoke on the last one, but is that for
16 cross examination or redirect?

17 THE COURT: That's for redirect.

18 THE WITNESS: Okay. Thank you.

19 THE COURT: It is now.

20 THE WITNESS: Sorry.

21 THE COURT: Go ahead.

22 Q. (BY MR. FENSTER) Dr. Foster, everything that you agreed
23 to as having been met by the hardware in the push notification
04:41 24 server on page -- on JX 58 for the Samsung push server, you
25 agree that the same -- the corresponding components of the FCM

1 system also satisfy all those functions. Correct?

2 A. I disagree that that forms a push notification server;
3 but the things within that box, yes, they -- yes. Yep.

4 Q. Okay. So you agree that the hardware that's part of
5 those systems does everything in the system; you just disagree
6 about whether it's one network server or two network servers.

04:42

7 Correct?

8 A. Or many network servers.

9 Q. Fair.

10 A. Okay. Thank you. Yes, I do.

11 Q. Okay. Now, with respect to element 1[h] -- you had to
12 submit an expert report in this case. Correct?

13 A. I did.

14 Q. Okay. And you were deposed in this case under oath.
15 Correct?

16 A. That's right.

17 Q. Where we were able to ask you about your opinions and
18 where you disagreed and where you agreed. Right?

04:42

19 A. That was -- I was asked many things, but it included
20 those things.

21 Q. And you agree that you had no opinion in your report
22 disputing the element 1[h], the portion of the claim that
23 requires "for each received message, map the application
24 identifier in the message to a software process corresponding
25 to the application identifier." Correct?

04:43

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1 A. If you don't mind, I'd like to see the language in the
2 report. Can I look at it?

3 Q. Can you answer my question, please?

4 A. Could you repeat the question, please?

5 Q. At your deposition -- strike that.

04:43 6 You did -- you do not have an opinion in your report
7 disputing the element 1[h], "for each received message, map
8 the application identifier to software process corresponding
9 to the application identifier." Correct?

10 A. Well, you're asking did I say that in my report, and I
11 will accept that that is in my report, yes.

12 Q. To be clear, I'm asking about -- you testified to that
13 under oath at your deposition. Correct?

04:44 14 A. Yes, I just don't know the full context. So I said those
15 things in my deposition; I don't know the full context in
16 which the question was asked, so I'm a bit hesitant to make
17 too broad an agreement.

18 Q. Dr. Foster, you do not have any opinion in your report
19 disputing this portion of the element "for each received
20 message, map the application identifier in the message to a
21 software process corresponding to the application identifier."
22 Correct?

04:45 23 A. That's correct, yeah.

24 Q. You agree, Dr. Foster, that both FCM and Samsung push
04:45 25 have the same architecture and so they either infringe or both

1 don't infringe for the same reasons. Correct?

2 A. That's my opinion, yes.

3 Q. Let's talk about your opinion regarding infringement.

4 Mr. Thompson asked you do you know why Samsung is being
5 sued for infringing by using the FCM system. Do you recall
6 that.

7 A. I do, yes.

04:45

8 Q. Now, you're aware that this is a network system that
9 includes both the network message server and the agent on a
10 mobile device. Correct?

11 A. That's correct, yes.

12 Q. And anyone who uses that system is an infringer of that
13 system. Correct?

04:46

14 A. So I'm not an expert in copyright--sorry--patent law, but
15 let's -- so that's -- so I'm not sure about that. I can
16 imagine it might depend on where different components are
17 located, for example.

18 Q. Do you know that Samsung specifically sells the devices
19 that include a GSM module that requires those devices that it
20 sells to use the FCM system? Correct?

04:46

21 A. I don't think that's something -- I know that by PSA, I
22 guess. I haven't talked to anyone to advise me on that
23 question.

24 Q. You don't dispute that, though. Right?

25 A. I do not, no.

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1 Q. Now, Samsung has made the point that the Samsung push
2 system was discontinued in the United States in 2020. Do you
3 recall that?

4 A. I do.

5 Q. Okay. Now, you understand that the damages period in
6 this case goes back to 2017. Correct?

04:47 7 A. So I heard yesterday, I think it was, yeah.

8 Q. So Samsung's use of the SPP system, if the jury finds
9 that it infringes claim 1, infringed from 2017 through 2020.
10 Correct?

11 A. I heard that, yes.

12 Q. And you know that Samsung has been using the FCM system
13 from 2017 all the way through the damages period to today.
14 Correct?

04:47 15 A. I think I heard that it was from 2020 onwards. Is
16 that -- yeah.

17 Q. So do you dispute that the accused devices also were able
18 to use the FCM system since before 2017?

19 A. I don't have information on that one way or the other.

20 Q. Okay.

21 A. Yeah.

04:48 22 Q. So in any event, you agree that Samsung's use of the FCM
23 system, if the jury finds that it meets the elements of claim
24 1 of the '117 Patent, would be infringing throughout the
25 period that Samsung was using the FCM system. Correct?

1 A. That would be my understanding, yes.

2 Q. And for the '733 Patent, which covers only the mobile
3 device, you understand that they've been selling those mobile
4 devices from 2017 all the way through. Correct?

5 A. That's my understanding, yes.

04:49 6 Q. All right. Let's talk about the network message server,
04:49 7 which seems to be the primary dispute for claim 1 of the '117.
8 Is that right?

9 A. Sure.

10 Q. Okay. Now, your interpretation of the network message
11 server is that it has to be limited to a single server.
12 Correct?

13 A. I don't think that's quite correct.

14 Q. You heard Mr. Thompson give you a little analogy about if
15 the jury does -- if there were a claim that the jury had to do
04:50 16 both deliberations and deliver the verdict, that it would be
17 two different jurors. Do you recall that?

18 A. I do.

19 Q. Now, a juror is a single person. Right?

20 A. That's correct.

21 Q. But the jury is the collection of jurors. Right?

22 A. That's correct, yes.

04:50 23 Q. And a server is not limited to a single machine.
24 Correct?

25 A. That's correct, yes.

1 Q. Unlike a juror. Correct?

2 A. That's -- well, yes, that's correct.

3 Q. Okay. Now, let's talk about network message server.

4 You have to interpret that as a person of ordinary skill
5 in the art. Correct?

6 A. That's right.

7 Q. And you have to do that in light of the specification.
8 Correct?

9 A. That's my understanding, yes.

10 Q. And in light of the claims. Correct?

11 A. Yes.

04:50 12 Q. Okay. Now, the claim specifies that the network message
13 server performs each of these four functions. Correct?

14 A. Yes.

15 Q. So it is a collection of hardware and software that
16 performs those functions as defined in the claim. Right?

17 A. Can you say that again?

18 Q. A network message server, as defined in the claim, is a
19 collection of hardware and software that performs the
20 functions recited in that claim. Correct?

21 A. I don't see the word 'collection of hardware'.

04:51 22 Q. You agree that a server is hardware and software that
23 performs the function of the server. Correct?

24 A. Yes.

25 Q. Okay. And that's not limited to a single machine.

1 Right?

2 A. Not always.

3 Q. So you agree that, as used in the claim, a network
4 message server is hardware and software that performs the
5 functions that are recited in the claim. Correct?

04:51 6 A. That's correct.

7 MR. FENSTER: And if we can pull up JX 3 at column
04:52 8 16. And I believe it's column 20 -- or at lines 20 to 26,
9 please.

10 Q. (BY MR. FENSTER) And you have to read a -- you have to
11 interpret a network message server in light of the
12 specification. Correct?

13 A. I -- yes, I do.

14 Q. Okay. And the specification specifically says, quote,
15 "It will be apparent to those of ordinary skill in the art
16 that the server names and functional breakouts do not imply
04:52 17 that each name is an individual server, and, for example, a
18 single named function in the various embodiments can be
19 implemented on multiple servers," and it goes on. Correct?

20 A. It does.

21 Q. The claim -- the specification also specifies that a
22 server farm -- that a server can be a server farm. Correct?

23 A. That is correct.

24 Q. And we saw that at -- you know that that's at column 20.
04:53 25 We've seen that -- column 22. We've seen that before. Right?

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1 A. You mean the reference to a server farm?

2 Q. Yes.

3 A. Yes, I've seen that.

4 MR. FENSTER: Let's go to column 22, lines 52 to 53.

5 Q. (BY MR. FENSTER) And the specification states that
6 "using one service controller server 122, e.g."--for
7 example--"a service controller server farm." Correct?

04:53 8 A. Yes, I see that.

9 Q. And you know as a person of skill in the art that the
10 service controller server 122 is referring to that network
11 message server.

12 A. Yeah, I think that's reasonable, yeah.

04:54 13 MR. FENSTER: And if we can go back to JX 58 at page
14 10, please.

15 Q. (BY MR. FENSTER) Samsung's pre-litigation document
16 describes the push notification server this way, referring to
17 -- strike that.

04:54 18 You agree that the pre-litigation document describes the
19 push notification server. Right?

20 A. No.

21 Q. Okay. You agree that it's entitled "push notification
22 server." Fair?

23 A. Yes.

24 Q. Okay. And the document that has a portion entitled "push
25 notification server" refers to everything within those dotted

1 lines. Correct?

2 A. That's right.

3 Q. Okay. And on the right it's the app server and on the
4 left is the client. Is that correct?

5 A. That's correct.

6 Q. And that's how Samsung in its pre-litigation document
7 referred to push notification server. Correct?

04:55 8 A. Well, it used -- it produced a document for some purpose
9 that has the word 'push notification server' on it. I don't
10 think it's true to say that it generally referred to it in
11 those closed terms.

12 THE COURT: Let me remind you to speak up,
13 Dr. Foster.

14 THE WITNESS: Oh, excuse me. Yeah.

15 Q. (BY MR. FENSTER) And Dr. Foster, you agree that the
16 network message -- strike that.

04:55 17 You agree that there is no language in the claim itself
18 that specifically specifies the physical architecture of this
19 network message server. Correct?

20 A. Well, no. It refers to it as a server, and I believe
21 that that term has a certain meaning in the art.

22 Q. And it has a meaning to people of skill in the art.
23 Right?

24 A. Yes.

25 Q. And it has to be interpreted by one of skill in the art,

1 as we agree, in light of the specification and the claims.

2 Correct?

3 A. That's right, yes.

04:56 4 Q. Now, the '117 Patent refers to the app -- an app

04:56 5 identifier. There's an application identifier, for example,
6 referred to in element 1[h]. Correct?

7 A. Yes.

8 Q. And you agree that that application identifier, as used
9 in the accused products, is the package name?

10 A. That's correct, yes.

11 Q. And 'package name' represents the application's
12 universally unique application ID. Correct?

13 A. I'm not -- I don't think I know one way or the other
04:57 14 whether the accused products enforce universal uniqueness. I
15 don't know.

16 Q. Okay.

17 MR. FENSTER: Can we pull up JX 68 at page 1,
04:57 18 please? And can we go down -- okay. There we go. Under
19 'package', if you could highlight that section.

20 Q. (BY MR. FENSTER) And it says, "The value of the package
21 attribute in the APK's manifest file represents your app's
22 universally unique application ID."

23 Did I read that correctly.

24 A. You did, yes.

25 Q. And so Google's document in JX 68, does that refresh your

04:58 1 recollection that the package name that Mr. de la Inglesia
2 maps to the application identifier is a universally unique
3 application ID?

4 A. It does, yes.

5 Q. Thank you.

6 Now, if we can go to talk about your opinions regarding
7 the '733 Patent. Is that all right?

04:58 8 A. Yes, please.

9 Q. And is it correct that you did not dispute any element of
10 1[pre]. Correct?

11 A. That's correct.

12 Q. The only part of element 1[a] that you disputed was
13 service control link. Correct?

14 A. That's correct.

15 Q. Everything else is met by both accused systems. You
16 agree? Everything else in element 1[a].

17 A. I agree, yeah.

04:59 18 Q. You had no dispute that the accused systems meet element
19 1[b]. Correct?

20 A. I did not, no.

21 Q. You didn't offer any opinions today disputing anything in
22 elements 1[c], 1[d], 1[e]. Correct?

23 A. That is correct.

04:59 24 Q. And the only thing you disputed is the agent identifier.
25 Correct?

1 A. That is correct, yes.

2 Q. And you understand that that agent identifier was mapped
3 to that same package name. Correct? By Mr. de la Inglesia.

4 A. That's correct, yes.

5 Q. And that agent identifier is used to deliver the message
6 content to that particular device agent. Correct?

05:00 7 A. Yes; used to deliver it to a device agent.

8 Q. Now, this claim has several requirements about
9 encryption. Correct?

10 A. That's correct.

11 Q. And you did not investigate whether FCM involves
12 encryption at all, did you?

05:00 13 A. Well, I know that it uses SSL TLS for communications, and
14 those are normally configured to apply encryption to data
15 that's used to communicate.

16 Q. So you don't dispute that it meets those limitations.
17 Correct?

18 A. I do not, no.

19 Q. But you did -- let me ask you again -- actually, if you
05:01 20 can go in your binder to your November 8th deposition.

21 Actually that's okay, Dr. Foster. Let's move on.

22 Okay. So your only dispute with respect to the '733 is
23 the -- in 1[a] is the service control link. Correct?

05:01 24 A. Yes, and I think the -- well...

25 Q. I'm asking you about 1[a].

1 A. Oh, yes. That's correct, yes.

2 Q. And because -- that's because you believe that service
3 control link has to be a dedicated channel only to control
4 communications. Correct?

5 A. Yes.

6 Q. Okay. Now, the claim is what you have to actually apply.
05:02 7 Right?

8 A. Yes, that's correct, yeah.

9 Q. And the claim specifically specifies that this same
10 service control link has to support control-plane
11 communications. Correct?

12 A. That's correct, yes.

13 Q. And it also has to carry agent messages. Correct?

14 A. I believe the -- well, it says that, yes.

15 Q. Okay. And those agent messages have to have an agent
16 identifier and message content. Correct?

17 A. That's correct.

05:02 18 Q. And you agree that message content in those agent
19 messages is data and not control. Correct?

20 A. No, I disagree.

21 MR. FENSTER: Can we pull up claim 7 from the '733
22 Patent? That's JX 1.

23 THE COURT: Try not to wear out the carpet,
05:03 24 Mr. Fenster. Happy for you to use your demonstrative.

25 Q. (BY MR. FENSTER) Okay. And this is -- claim 7 is one of

1 the asserted claims here. Correct?

2 A. That's correct, yes.

3 Q. And it's one that you don't dispute that is met.

4 Correct?

5 A. That's correct.

6 Q. Okay. And claim 7 specifies that the message content in

7 that agent identifier comprises a service offer, an

8 advertisement, or a transaction offer. Correct?

05:03 9 A. That's correct.

10 Q. You agree -- you're not trying to tell the jury that a

11 service offer, an advertisement, or a transaction offer are

12 control-plane communications, are you?

13 A. No.

14 Q. Okay. You agree that those are data?

15 A. I do.

16 Q. Okay. So can we -- do you still maintain that the claim

17 does not specifically specify that that link has to carry both

18 control-plane communications and data agent messages?

05:04 19 A. Can you repeat that, please?

20 Q. Sure. Do you dispute that the service control link has

21 to be configured to support both control-plane communications

22 and agent messages, which are data?

23 A. I agree.

24 Q. Thank you.

25 And you don't dispute any of the dependent claims for

1 either of the '117 Patent or the '733 Patent. Correct?

2 A. That's correct.

05:04

3 Q. So you agree that if the jury finds that we've met our
4 burden of proving by a preponderance of the evidence that
5 Samsung infringes claim 1 of the '117 Patent -- the '117
6 Patent, you would agree that we met our burden of proof as to
7 all the dependent claims as well. Correct?

8 A. All the asserted dependent claims, yes, I agree.

9 Q. Thank you for the clarification. I agree with you.

10 A. Yeah.

05:05

11 Q. And the same is true with the '733 Patent--that if the
12 jury agrees that we've met our burden of proof as to the '733
13 claim 1, that they would also find infringement -- you agree
14 that they should also find infringement of the dependent
15 claims asserted as well.

16 A. I agree.

17 Q. Okay.

18 THE COURT: No need, Mr. Fenster, to tell the jury
19 that you agree with the witness.

20 MR. FENSTER: I apologize.

21 THE COURT: You just said, "I agree with you."
22 Let's ask questions.

05:05

23 MR. FENSTER: Yes, Your Honor.

24 Q. (BY MR. FENSTER) Now, in your examination with
25 Mr. Thompson, you spent some time discussing the benefits --

1 the extra benefits of the claimed invention relative to the
2 prior art. Do you recall that?

3 A. I do, yes.

05:06

4 Q. And you suggested during your examination that
5 Mr. de la Inglesia did not value the benefits to Samsung
6 of infringing Headwater's patents correctly. Correct?

7 A. I did, yes.

8 Q. Okay. Now, to be clear, you have not offered any opinion
9 today that Samsung has a non-infringing alternative to using
10 the accused systems to do push servicing -- push services.
11 Correct?

05:06

12 A. I have not been asked about that, no.

13 Q. And you have not offered any opinion to the jury that
14 there is any non-infringing alternative to push messaging
15 other than using the accused systems. Correct?

16 A. Can you repeat the question, please?

17 Q. Sure. You have not provided any opinion today that there
18 is any -- that Samsung has any non-infringing alternative
19 available to it to do push messaging other than using the
20 accused systems?

05:07

21 A. I was not asked about that, no.

22 Q. Okay. Now, you talked about some prior art systems.
23 Correct?

24 A. I did.

25 Q. But you didn't provide any opinion to the jury that those

1 -- that Samsung could use those prior art systems instead of
2 the accused systems. Correct?

05:07

3 A. I was not asked about that either.

4 Q. You've been here throughout the trial?

5 A. I have.

6 Q. And you've heard testimony that by using Google's FCM
7 system, Samsung receives a revenue share from Google?

8 A. I heard a brief mention of that. I don't know anymore
9 about it.

05:08

10 Q. And you understand that if Samsung tried to remove the
11 FCM system and stop using it, that it would give up that
12 revenue share. Do you understand that?

13 A. Actually I don't know that, no.

14 Q. Dr. Foster, I appreciate your time.

15 MR. FENSTER: Pass the witness, Your Honor.

16 THE WITNESS: All right. Thank you.

17 THE COURT: All right. Redirect by the Defendant.

18 MR. THOMPSON: Yes, Your Honor.

19 THE COURT: Are you going to use these boards,
20 Mr. Thompson? If so we'll leave them up; if not I'll have Mr.
21 Fenster take them down.

05:09

22 MR. THOMPSON: I'll help him take them down. I
23 don't think I'll need them. Thank you.

24 THE COURT: He can take them down; I just wanted to
25 know whether you're going to use them or not.

1 MR. THOMPSON: Okay, then. No, sir.

2 THE COURT: All right. Ladies and gentlemen, while
05:09 3 we retransition to redirect, let's stand up and stretch.

4 (Pause in proceedings.)

5 THE COURT: Mr. Fenster, turn that board around,
6 please. Thank you.

7 All right. Be seated, please.

8 Mr. Thompson, you may proceed with redirect examination.

9 MR. THOMPSON: Thank you, Your Honor.

05:10 10 Mr. Andryszak, could I have JX 9 at page 39, please? And
11 can you bring up the set action?

05:09 12 REDIRECT EXAMINATION

13 BY MR. THOMPSON:

05:09 14 Q. Dr. Foster, do you recall Mr. Fenster asking you some
05:10 15 questions about whether the prior art had the ability to
16 include a package name within an intent?

17 A. I do, yes.

18 Q. And is this an excerpt from a Google document from 2007
19 indicating the functionalities of an intent at that time?

20 A. It is, yes.

21 Q. And what do we see here?

22 A. Yeah. So the description of a set action function, which
23 was the way you could specify constraints on an intent. And
05:10 24 here we see a recommendation that when performing an
25 application -- specific action, you should prefix it with the

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1 vendor's package name.

2 Q. Now, Mr. Fenster asked you whether you pointed to any
3 specific code from back in 2007 where someone used this
4 specific package name. Do you recall that?

5 A. I do.

05:11 6 Q. Do you expect that Google advised developers they should
7 use the vendor's package name and no one ever did it?

8 A. No.

9 MR. THOMPSON: We can take that down. Thank you.

10 Q. (BY MR. THOMPSON) You were asked questions about how
11 yourself and Samsung have pointed to instances in the patent
12 specification about billing and control. Do you recall those
13 questions?

14 A. I do.

05:11 15 Q. And Mr. Fenster asked you did you agree that we need to
16 look at the claims for the purposes of infringement and
17 invalidity.

18 A. He did. That's right.

19 Q. When you look at the claims, Dr. Foster, do you see any
20 mention of aggregated push messaging?

21 A. I do not, no.

22 Q. Now, Mr. Fenster also asked you whether you understand
23 that the claims have to be interpreted in light of the
24 specification. Do you recall that?

05:12 25 A. I do, yes.

1 Q. And is that why you reviewed the specifications for the
2 patents in this case?

3 A. That's right, yes. I was required to do so by the -- by
4 this practice, yeah.

5 Q. And does the specification indicate that the system was
6 about billing and control?

7 A. It does, yes.

8 Q. And you've been here for both of the testimony given in
9 this case. Is that correct?

10 A. Yes, I have, yes.

05:12 11 Q. And have you witnessed any Headwater witness put up
12 portions of the specification that relate to innovations and
13 aggregated push messaging?

14 A. I have not, no.

15 MR. THOMPSON: May I please have the elmo? Thank
16 you, ma'am.

17 Q. (BY MR. THOMPSON) Mr. Fenster commented that you hadn't
05:13 18 shown any documentation to indicate that in GtalkServices back
19 in 2008 Google was sending push messages from multiple
20 servers. Do you recall that?

21 A. I don't recall exactly the question, but it sounds
22 familiar, yeah.

23 Q. I believe Mr. Fenster was making the point -- or asking
24 you questions about whether you showed evidence that there
25 were multiple application servers sending push messages in the

1 GtalkService. Do you recall that?

05:13

2 A. Yeah. Certainly I would not have -- if I spoke to say
3 that that was not the case, then I was -- must have
4 misunderstood the question. But anyway, I recall that.

5 Q. Well, shortly thereafter do you recall Mr. Fenster
6 showing you excerpts from PTX 335 concerning security risks?

7 A. Yes, that's right.

05:14

8 Q. And in the exhibit he showed you, do you see where it
9 says "The GtalkService will provide connectivity to Google's
10 servers"?

11 A. That's right, yes.

12 Q. And does that indicate to you that Google is sending push
13 messages from multiple servers back in 2008?

14 A. That seems a reasonable reading of it, yes.

05:14

15 Q. I have here the -- some of the claim language from the
16 '117 Patent. Can you read that okay, Dr. Foster?

17 A. I can, yes.

18 Q. And do you see the portion of the claim language where it
19 says, "Forward the application data in the message to the
20 software process"?

21 A. I do.

22 Q. And did you opine here today that that is inconsistent
23 with how the accused push systems deliver messages?

24 A. I believe I did, yes.

05:15

25 Q. Did Mr. Fenster ask you any questions about that opinion?

1 A. No, he did not.

2 Q. Now, did Mr. Fenster ask you about some deposition
3 testimony that you provided that said you weren't contesting
4 the mapping element of the '117 Patent?

5 A. Well, he asked specific -- so, yes, he did, yeah.

05:15

6 Q. You are, indeed, contesting the portion of the patent
7 concerning forward the application data in the message to the
8 process. Is that right?

9 A. Yes; exactly.

10 MR. FENSTER: Objection; leading, Your Honor.

11 THE COURT: Sustained.

12 Q. (BY MR. THOMPSON) Dr. Foster, are you contesting the
13 limitation in the '117 Patent that reads "forward the
14 application data in the message to the software process"?

15 A. Yes, I am, yes.

05:16

16 Q. And do you see in the '733 Patent we have discussion of a
17 service control device link agent?

18 A. I do.

19 Q. And towards the bottom do you see this language "deliver
20 the message content to the particular device agent"? Do you
21 see that?

22 A. I do.

23 Q. Do you have -- did you offer the opinion here today that
24 that limitation is not satisfied by the accused push systems?

25 A. I did.

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05:17 1 Q. Dr. Foster, you offered some opinions on the Kalibjian
2 and WAP prior art. Do you recall that?

3 A. I do.

4 Q. And in your opinion, those references, did they disclose
5 certain aspects that would have been obvious at the time of
05:17 6 the patents in this case?

7 A. Yes. That's what I said earlier, I believe.

8 Q. And do you understand a person as of that time would have
9 read those references and used their logic and common sense to
10 understand how they might apply to later prior art?

11 MR. FENSTER: Objection; leading, Your Honor.

12 THE COURT: Sustained.

13 Avoid leading, counsel.

14 MR. THOMPSON: Yes, sir.

15 Q. (BY MR. THOMPSON) Would a person have applied logic and
16 common sense when reading those references?

17 MR. FENSTER: Objection, Your Honor; leading and
05:17 18 beyond the scope of direct. He didn't provide any opinion
19 on --

20 THE COURT: It continues to be leading, and I'll
21 sustain the objection.

22 MR. THOMPSON: Yes, sir.

23 Q. (BY MR. THOMPSON) When a person would read prior art
24 references like that, what would they have in their mindset?

25 A. Well --

1 MR. FENSTER: Calls for speculation.

2 THE COURT: Well, he's an expert. He can talk about
3 what a person of ordinary skill would understand. To the
4 extent that's the context of the question, I'll allow it.

5 MR. THOMPSON: Yes, sir.

05:18

6 THE COURT: But it needs to be asked in a
7 non-leading fashion.

8 MR. FENSTER: Your Honor, also Rule 26, to the
9 extent he's going into motivation to combine. If that's what
10 the question is getting at, there is no support for that, Your
11 Honor.

12 THE COURT: Well, to the extent he's going into it,
13 we'll cross that bridge if we get to it. Anticipatory
14 objections don't really go very far.

15 All right. Ask your question or move on, counsel.

16 MR. THOMPSON: Yes, sir.

17 Q. (BY MR. THOMPSON) When a person of ordinary skill in the
18 art is reading a piece of prior art, can you explain to me
19 what their mindset would be?

05:19

20 A. Well, it depends on the context. Certainly a common
21 reason for saying me as a researcher to be looking for
22 something would be because I sense some limitation in what I'm
23 doing and I'm trying to see how other people might have solved
24 the same problem.

25 Q. And would you apply any expertise in your field when

1 reading prior art references?

05:19 2 A. Yeah, of course, that's -- yes.

3 Q. And in your experience, have you thought about ways that
4 you might be able to use technology you're reading about in
5 future designs?

6 A. Yeah, that's a lot of my work is involved in trying to
7 solve challenging problems, and I'm always looking for how
8 other people have solved those problems.

9 Q. And do you expect that a person of skill in the art would
10 have read the prior art in this case the same way?

05:19 11 A. I would think so. I would hope so, yes.

12 MR. THOMPSON: No further questions. I'll pass the
13 witness.

14 THE COURT: All right. Additional cross,
15 Mr. Fenster?

16 MR. FENSTER: Briefly, Your Honor.

17 THE COURT: All right. Please proceed with
18 additional cross examination.

19 REXCROSS EXAMINATION

20 BY MR. FENSTER:

05:20 21 Q. Dr. Foster, you still have not -- even on redirect you
22 still did not provide -- strike that.

23 Mr. Thompson asked you about a suggestion that someone
24 could use the package name in the prior art. Do you recall
25 that?

1 A. I do.

2 Q. And you still have not provided the jury any evidence
3 from Google, from Samsung, of a single instance where anyone
4 actually did that prior to the priority date. Correct?

05:20 5 A. That's correct.

6 Q. Mr. Thompson asked you about interpreting the claims in
7 light of the specification and whether you -- it was okay to
8 look at the billing requirements there. Do you recall that?

9 A. I don't --

10 Q. Look at the discussion in the specification of billing?

11 A. I don't remember the exact wording, but that sounds
12 right, yeah.

05:21 13 Q. Now, Dr. Foster, you understand that it is absolutely
14 improper to import any limitation into the claims from the
15 specification, don't you?

16 A. I do, yes.

17 Q. Samsung's lawyers told you that when you were doing your
18 analysis. Right?

19 A. They would have, yeah.

20 Q. And there's no billing requirement in any of the claims.
21 Right?

22 A. That's right.

23 Q. Okay. The last thing Mr. Thompson asked you about was
24 with respect to obviousness.

05:21 25 Now, with respect to obviousness, you have to show by

1 clear and convincing evidence that a person of ordinary skill
2 in the art would have combined the two references that you
3 rely on, the Gtalk reference and either WAP or Kalibjian as of
4 the priority date. Correct?

5 A. That's right.

6 Q. Okay. Now, in fact, no one of ordinary skill in the art
05:22 7 or even extraordinary skill in the art or Google actually did
8 do that combination prior to the priority date. Correct?

9 A. Well, that's not -- it's a very broad statement that I
10 have no way to answer.

11 Q. You have no -- you haven't provided any testimony to the
12 jury that anyone did combine the WAP reference or the
13 Kalibjian reference with the prior art Gtalk as of the
14 priority date. Correct?

15 A. That's correct, yes.

16 Q. Okay. And, in fact, even after Google recognized that
05:23 17 there was a security problem with the prior art system, it
18 still did not combine Gtalk with either WAP or Kalibjian.
19 Correct?

20 A. I disagree with the premise of the question.

21 Q. Okay. Let me remove the premise. Google never did
05:23 22 combine the GtalkService with either the WAP or the Kalibjian
23 reference. Correct?

24 A. They did not, no.

25 Q. And, in fact, you haven't provided any evidence that

1 anyone ever did. Correct?

2 A. I have not, no.

3 MR. FENSTER: Pass the witness, Your Honor.

4 THE COURT: All right. Additional direct,
5 Mr. Thompson?

6 MR. THOMPSON: Just two questions, maybe, Your
7 Honor, if I may.

8 THE COURT: I can count to two.
9 Go ahead.

10 REDIRECT EXAMINATION

11 BY MR. THOMPSON:

05:23

12 Q. Dr. Foster, for purposes of your analysis, did you
13 improperly read limitations from the specification into the
14 claims?

15 A. I did not, no.

16 Q. And FOR your opinion on the service control link, did
17 your non-infringement analysis, was it based on the fact that
18 there's no link in the accused products for controlling our
19 service?

20 A. That's correct, yeah.

21 MR. THOMPSON: Nothing further.

22 THE COURT: You pass the witness.

23 MR. THOMPSON: I pass the witness, yes, sir.

24 THE COURT: All right. Mr. Fenster, anything
25 further?

1 MR. FENSTER: No, Your Honor.

05:24

2 THE COURT: All right. You may step down
3 Dr. Foster.

4 THE WITNESS: Thank you.

5 THE COURT: You're welcome.

6 Ladies and gentlemen, we're going to take a very short
7 recess. If you'll simply leave your notebooks in your chairs
8 follow my instructions --

9 You can step down, Dr. Foster.

10 -- and we'll be back shortly to continue.

11 The jury's excused for recess.

05:25

12 (Whereupon, the jury left the courtroom.)

13 THE COURT: All right, counsel. We'll keep this to
14 10 minutes or less.

15 The Court stands in recess.

16 (Brief recess.)

17 THE COURT: Be seated, please.

05:32

18 Defendants, are you prepared to call your next witness?

19 MR. REGER: We are, Your Honor.

20 THE COURT: All right. And I assume that will be
21 Dr. Perryman.

22 MR. REGER: Yes, sir.

05:32

23 THE COURT: Before the jury gets in the room, Dr.
24 Perryman, I'm going to ask you please talk slowly. You know
25 me and I know you, and let's just get it out of the way early.

1 Talk slowly.

2 All right. Bring the jury in, please.

3 (Whereupon, the jury entered the courtroom.)

05:33 4 THE COURT: Please be seated, ladies and gentlemen.

5 Defendants call your next witness, please.

6 MR. REGER: Good evening, Your Honor. Samsung calls

7 Dr. Ray Perryman.

8 THE COURT: Good afternoon. Please come forward,

9 Dr. Perryman.

10 THE WITNESS: Thank you, Your Honor.

11 (Whereupon, the oath was administered by the Clerk.)

05:33 12 THE COURT: Please come around, sir. Have a seat on

13 the witness stand.

14 THE WITNESS: Thank you, Your Honor.

15 THE COURT: Mr. Reger, you may proceed with direct
16 examination.

17 MR. REGER: Thank you, Your Honor.

05:33 18 Good afternoon, ladies and gentlemen of the jury. Once

19 again, my name is Tom Reger.

20 RAY PERRYMAN, Ph.D.

21 having been first duly sworn, testified under oath as follows:

22 DIRECT EXAMINATION

23 BY MR. REGER:

24 Q. Dr. Perryman, could you please introduce yourself to the
25 jury?

1 A. Yes, sir. My name is Ray Perryman.

2 Q. And can you tell the jury a little bit about yourself?

3 A. Well, I grew up over in Lindale, not just too far down
4 the road on I-20. And then I have five kids, five grandkids.
5 I am married to the former mayor of Odessa and, therefore, I
6 live in Odessa.

05:34 7 Q. And what do you do for a living, sir?

8 A. I am an economist.

9 Q. And how long have you worked as an economist?

10 A. Oh, almost 50 years.

11 Q. And where do you work as an economist, sir?

12 A. I work at a company that I started a number of years ago
13 known as The Perryman Group.

14 Q. And how long have you worked at your company, sir?

15 A. We actually incorporated in 1985. I was doing some
16 similar work before that.

05:34 17 Q. And, just generally, what kind of work do you do for The
18 Perryman Group?

19 A. We do basically all types of economic analysis. We do
20 forecasting for companies, we do economic development work, we
21 do impact studies, policy studies, regulation, litigation like
22 we're here about, that sort of thing.

23 Q. And can you tell the jury where you studied to become an
24 economist?

25 A. Yes, sir. After I graduated from Lindale High School, I

05:35 1 attended Baylor University and received a Bachelor's degree in
2 mathematics. And then I went to Rice University down in
3 Houston and received a Ph.D. in economics.

4 Q. And sir, have you published any books or papers?

5 A. Yes, sir, I have. I published about -- there's a couple
6 of buckets. One is the academic work and one is when you just
7 write articles like for a magazine or a newspaper, that sort
8 of thing. I've published about 400 academic articles that are
05:35 9 primarily written for other economists, and then about 3,000
10 of the trade articles.

11 Q. All right. Now, at the bottom right I see "syndicated
12 radio program." Can you tell us a little bit about that?

13 A. Yes, sir. You have to listen fast. I have a one-minute
14 commentary everyday on the Texas State Network, which goes all
15 over Texas. I think it's about 125 or so stations, including
16 one here in Marshall.

17 Q. And what's it called, sir?

18 A. It's called The Perryman Report.

19 Q. All right. And have you ever taught economics?

05:36 20 A. Yes, I have. I was a professor at Baylor University for
21 17 years and then was at Southern Methodist University for
22 five years.

23 Q. And how many college students have you taught over the
24 years, sir?

25 A. I have no idea--thousands.

1 Q. What experience do you have in patent analysis and patent
2 valuation specifically?

3 A. Well, I've been doing that sort of work for more than 30
05:36 4 years, and I've worked for many companies. There are some
5 examples on the demonstrative that's up here--HEB, Amazon,
6 Verizon, some others there. I've probably evaluated -- well,
7 I know I've evaluated thousands of patents over the years.
8 I've also been involved in assisting people who were trying to
9 license patents or trying to sell patents, and occasionally,
10 not real often, but occasionally even been the person sitting
11 at the table assisting that.

12 Q. Do you only work on litigation like this?

05:37 13 A. Oh, no, sir. We work on a lot of things. We have
14 thousands of clients. Some local examples, we've helped with
15 some of the Haynesville Shale analysis for the oil and gas
16 field that's around here. A number of years ago we did the
17 studies that helped get the TSTC campus here in Marshall. And
18 then just last week I was here giving a speech for the
19 Marshall Economic Development Foundation.

20 Q. Now, in cases like this, do you work for both the
21 plaintiff and defendant?

05:37 22 A. Yes, sir, I have.

23 Q. And have you ever been -- withdrawn.

24 How many times have you worked for Samsung over the
25 years?

1 A. I think it's about six times over about 25 years,
2 something like that.

3 Q. Now, are you always retained by big companies like
4 Samsung?

5 A. Oh, no, sir. We have thousands of clients that include
6 small businesses, chambers of commerce, trade associations,
05:38 7 small -- large companies. It kind of runs the gamut.

8 Q. Now, we heard from Dr. Groehn about surveys and conjoint
9 analysis. Can you tell the jury a little bit about your
10 experience with those?

11 A. Sure; certainly. As far as surveys are concerned, I
12 taught those classes for years. I have conducted hundreds of
13 surveys myself. At one point in time I was -- was partner in
14 a company that conducted consumer surveys on a regular basis.
05:38 15 I've also helped the federal government with the surveys they
16 use to like measure the unemployment rate or measure the
17 consumer price index or that sort of thing as well.

18 Q. And does conjoint analysis involve something called
19 regression?

20 A. Yes, it does. Once you complete the survey you have to
21 do some statistical analysis of that, and that analysis is a
22 technique we call regression analysis.

23 Q. And what's your experience with regression, sir?

24 A. Well, a lot. I don't think there's been more than a
05:39 25 handful of days in the last 40 years I haven't used it. It's

1 a technique that basically uses one variable -- uses several
2 variables to explain what happens with another variable, and I
3 have -- I built the economic model of the State of Texas that
4 the State uses. I built that starting in the 1970s, and it's
5 still in use today by I think about 40 state agencies, the
6 Governor's Office, and pretty much everyone in State
05:39 7 government, as well as a lot of companies. And from there
8 expanded out from that and I now have a big modeling system
9 that models areas all over the world.

10 Q. And what is that model in Texas called, sir?

11 A. It's called the Texas Econometric Model.

12 Q. And can you briefly describe what the Texas Econometric
13 Model is?

14 A. Sure. When you build a model like that, what you try to
15 do is -- obviously we can't like a scientist have a
16 laboratory, they can have a control group and an experimental
05:40 17 group and all that. We can't do that, so we basically try to
18 describe the economy as best we can with these equations. And
19 there are millions of them, and so that way we can look at it
20 with different oil prices or look at it with different
21 interest rates or look at it with different tariffs and see
22 how it performs relative to some baseline, and that gives us
23 an idea of basically how the economy might react to some of
24 these things.

25 Q. And Dr. Perryman, are there any awards you've received

1 throughout your career?

05:40

2 A. Yes, sir. I -- that's a hard question. I've been very
3 lucky. People have been very kind to me in that regard. I
4 guess if I was going to pick one out of a list, I would
5 probably say in 2012 the legislative conference named me the
6 Texan of the Year because of the work I did with the model as
7 well as using that to come up with some policies that have
8 helped Texas lead the country this economic development for
9 the last 20 years.

05:41

10 MR. REGER: Your Honor, Samsung tenders Dr. Perryman
11 as an expert in patent valuation and the valuation of
12 intellectual property, including econometrics and regression.

13 THE COURT: Is there objection?

14 MR. MIRZAIE: No objection, Your Honor.

15 THE COURT: Without objection, the Court will
16 recognize this witness as an expert in those identified
17 fields.

18 Please continue, counsel.

19 MR. REGER: Thank you, Your Honor.

20 Q. (BY MR. REGER) Dr. Perryman, what are you here to talk
21 about today?

05:41

22 A. Well, basically two things. Number one, I will be
23 talking about what an appropriate amount of compensation would
24 be if it's determined by you folks that these patents are
25 valid and infringed; I'll be talking about what an appropriate

1 amount of payment would be for that. And then I'll also be
2 looking at the work that you heard about from Dr. Perryman,
3 Dr. Groehn, and Mr. Dell, and discussing some of their work as
4 well and some of the issues I found with it.

5 Q. Now, did you review any materials as part of your
6 analysis?

7 A. Yes, sir, I did.

8 Q. And can you give the jury some examples of the
9 information you reviewed?

05:42 10 A. Sure. It was -- we got a lot of information from
11 Headwater, their various -- obviously their patents, the
12 records, company presentations, correspondence, a lot of
13 things from Samsung about license agreements and financial
14 information, looked at the patents, looked at deposition
15 transcripts of a lot of people, expert reports, those kind of
16 things; so basically a pretty broad spectrum of the documents
05:42 17 that were produced in this matter.

18 Q. And have you been in trial all week, sir?

19 A. Yes, I have.

20 Q. Now, do you understand that Samsung in this courtroom is
21 disputing infringement and validity?

22 A. Oh, yes, sir, I do.

23 Q. And what happens if the ladies and gentlemen of the jury
24 find that Samsung is not infringing these patents?

25 A. Well, if it's determined that Samsung is not infringing

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1 these patents, then you never get to the work that I'm doing
2 and the damages would be zero.

05:43 3 Q. Would you be okay with that, sir?

4 A. Absolutely.

5 Q. Now let's talk about your analysis. Can you tell the
6 jury the framework for your analysis?

7 A. Sure. And you heard Mr. Dell talk about this as well,
8 that we're asked to look at this in the framework of what's
9 called a hypothetical negotiation, and that is -- obviously
10 these two companies didn't sit down back in 2013 across a
05:43 11 table and try to make a deal. We try to replicate what that
12 process might have looked like if that had actually happened.

13 Q. And are there ground rules you follow to construct this
14 hypothetical negotiation?

15 A. Yes, there are. We try to make it as realistic as
16 possible, like what you might actually expect to happen, and
17 in order to do that we've been given certain ground rules.
18 Everybody will be reasonable, really try to reach an

05:44 19 agreement; everybody will assume that the patents are valid
20 and infringed. And I know that's something that's contested
21 here, as we just discussed, but we -- everyone that does this
22 analysis does that.

23 And then another one, which is kind of interesting, is
24 that we assume that all the cards are on the table. It's not
25 like a situation where if I'm buying a car from you or you're

1 buying from a car from me, one of us might know something that
2 the other one didn't. It's not like that. All the cards are
05:44 3 on the table, even to the point that we all get to know what
4 happened after that as well.

5 Q. Now, because this is a hypothetical negotiation, does
6 that mean you ignore real-world evidence?

7 A. Oh, not at all. In fact, what's happened in the real
8 world in similar situations is something that can really help
9 to inform what might happen in this situation.

10 Q. So when you approach the hypothetical negotiation from
11 the perspective of Headwater, did you actually rely on
05:45 12 real-world evidence to determine what they might agree to?

13 A. Yes, I did.

14 Q. Now, Mr. Dell testified that he had used something called
15 the *Georgia-Pacific* factors. Did you consider all those
16 factors as well?

17 A. Yes, I did. As Mr. Dell told you, again, this is the
18 framework we typically use for this type of work--15 factors
19 that, again, mostly are just kind of common sense things you
20 would think about that would help you figure out what would
21 happen in the real world if this negotiation had actually
22 taken place.

05:45 23 Q. And after you conducted your analysis, can you briefly
24 describe your overall opinions to the jury, please?

25 A. Well, my overall opinions were that what Mr. Dell did is

1 unreliable, and it's basically based on two other reports,
2 both of which have flaws that make it where you really can't
3 use either one of them, and that he really should have
4 considered all the real-world evidence that we have about what
5 would have likely happened if these two folks had sat down
6 across a table.

05:46 7 Q. All right. Well, why don't we start with the second one
8 first.

9 A. Sure.

10 Q. Was the primary input to your analysis the opinions of
11 paid experts?

12 A. No, they were not. Other than needing to get a little
13 technical information from some folks, I relied on the
14 real-world information that's out there.

15 Q. And what's some of the real-world information that you
16 considered?

05:46 17 A. Well, first of all, as you'll see as we talk about this,
18 there really wasn't any market interest in the Headwater
19 patents. No one was out trying to buy or license these
20 patents. There were no comparable licenses for Headwater that
21 we could look at. But Samsung has licensed a lot of other
22 technology that's similar to this technology, and so we can
23 look at those agreements, see how much Samsung paid, and that
24 helps give us an indication of what Samsung would come into
25 this negotiation expecting.

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05:47 1 Q. Dr. Perryman, in your experience is this type of
2 real-world evidence the things that negotiators would actually
3 consider in negotiations?

4 A. Oh, certainly. I mean, again, this is the information
5 that tells you how does the market feel about this technology,
6 how does the market feel about related technology, how are the
7 parties who are out there everyday in these fields doing this
8 work, how are they looking at this technology.

05:47 9 Q. And so in your experience are these things Mr. Dell
10 should have considered in his hypothetical negotiation?

11 A. Unfortunately he did not, no.

12 Q. But should he have, sir?

13 A. Oh, absolutely.

14 Q. Now, what is your understanding of the technical value of
15 the patents?

16 A. Well, my understanding of the technical value comes from
17 reading Dr. Foster's report and discussing it with Dr. Foster,
18 whom you just heard from, and my understanding is that these
05:48 19 patents are of limited value, if any at all, in terms of any
20 new contributions to these products.

21 Q. So let's stop right there. Did the market -- did the
22 outside world, did the market agree with Dr. Foster's view of
23 the value of these patents or with Headwater's view of the
24 value of these patents?

25 A. Well, the market evidence suggests that Dr. Foster was

1 correct in that we've seen no indication in the marketplace
05:48 2 that any value has been assigned to this technology.

3 Q. And why do you say that, sir?

4 A. Well, basically I know it's been -- Headwater and ItsOn
5 shopped this to a lot of people, and there was no interest,
6 and then there hasn't been anyone that's taken the license to
7 these patents or purchased these patents or anything of that
8 nature.

9 Q. Now, did any company initially express maybe a little
10 interest in these patents?

05:49 11 A. Yes, sir. InterDigital did, yes.

12 Q. And just briefly, who is InterDigital?

13 A. InterDigital is a very large technology company that
14 functions in video and other areas. They have thousands of
15 patents. I've evaluated a number of them over the years.
16 They have -- they're just a very large and very successful
17 technology company.

18 Q. Is InterDigital experienced in acquiring patents?

19 A. Oh, absolutely, yes, sir.

05:50 20 Q. Now, did Headwater and InterDigital ever put their
21 intentions in writing?

22 A. Yes, sir, they did.

23 Q. And how did they do that?

24 A. They signed what is called a letter of intent, which
25 basically says there's -- they have an interest in potentially

1 reaching an agreement to purchase -- to purchase these patents
2 under certain terms.

05:50 3 Q. Did you analyze this letter of intent between
4 InterDigital and Headwater?

5 A. Yes, I did.

6 Q. Was it a complicated agreement?

7 A. No, not at all. It's very straightforward.

8 Q. Should Mr. Dell have analyzed this agreement?

9 A. I would certainly think so. I mean, it's a situation
10 where the very technology that's at issue here in this case
11 was under consideration, and Headwater actually made some
05:50 12 commitments in that regard, so from that perspective I think
13 certainly he should have.

14 Q. Did we hear any analysis from Mr. Dell about the
15 InterDigital deal?

16 A. No, sir, we did not.

17 Q. All right. Well, let's talk about your analysis, then.

18 A. Sure.

19 Q. Could you please explain to the jury briefly what a
20 letter of intent is?

21 A. Okay. Well, a letter of intent is basically something
22 you do before you go to a final contract and you say, We're
23 going to work to try to make this deal under these terms, and
05:51 24 then you go from there and do some additional work to try to
25 get you something final. You might think of it like, you

1 know, you get an inspection done on a house. Before you buy
2 it, even after you decided on the price and signed a few
3 papers, you still have the right to have it inspected, and
4 that sort of thing is similar to that.

5 Q. I'll jump ahead. Did we see evidence in this case that
6 InterDigital actually did that house inspection?

7 A. Yes, we did.

8 Q. Okay. We'll come back to that in a moment.

9 A. Okay.

05:51 10 Q. On this slide we see a snippet. It says "recitals." Can
11 you tell us where that comes from?

12 A. Yes, sir. That's right up at the very front of the
13 agreement.

14 Q. Okay. The actual letter of intent?

15 A. Yes, sir.

16 Q. Okay. And I see an exhibit down here. If the ladies and
17 gentlemen of the jury want to actually look at this simple
18 letter of intent between InterDigital and Headwater, what
19 exhibit would they ask for?

20 A. They would ask for JX 36.

05:52 21 Q. Now, here in the second 'whereas' clause, I see "ID
22 Video." Is that InterDigital, sir?

23 A. Yes, sir. The 'ID' is InterDigital. That's correct.

24 Q. And what does this say is the primary purpose of the
25 letter of intent?

05:52

1 A. Well, this particular one says "ID Video or one of its
2 subsidiaries is interested in acquiring Headwater to acquire
3 the patent portfolio," and so what they're interested in is
4 potentially purchasing these patents.

5 Q. Roughly how many patents was Headwater trying to sell at
6 this time?

7 A. About 400 total patents.

8 Q. At the time that Headwater signs this deal with
9 InterDigital, this letter of intent with InterDigital, were
10 there two patents in this case part of it?

11 A. Yes, sir, they were.

12 Q. What was the date of this agreement?

05:53

13 A. I believe it was February the 10th of 2020, which is well
14 after the point that these patents were issued.

15 Q. And how much money did Headwater agree to close the deal
16 to sell its patents?

17 A. Well, Headwater agreed they would sell these four
18 patents--I'm sorry--these 400 patents, and the closing payment
19 would be \$60 million.

20 Q. Thank you, Dr. Perryman.

05:53

21 MR. REGER: Your Honor, at this time I request we
22 seal the courtroom. It will be Headwater confidential
23 information.

24 THE COURT: All right. Based on counsel's request
25 and to protect confidential information, I'll order the

1 courtroom sealed.

2 I'll direct that any persons present who have not
3 executed or are not subject to the protective order in this
4 case should excuse themselves until the courtroom is reopened
5 and unsealed.

6 Let me know when we reach that point, Mr. Reger.

7 MR. REGER: Thank you, Your Honor. Will do.

05:54

8 MR. MIRZAIE: Can we confirm Dr. Raleigh can stay
9 for this?

10 MR. REGER: It's Headwater confidential.

11 (Courtroom sealed.)

12 [REDACTED]

13 [REDACTED].

14 [REDACTED]

15 Q. [REDACTED]

16 [REDACTED]?

17 A. [REDACTED].

18 [REDACTED].

19 Q. [REDACTED]

20 [REDACTED]

21 [REDACTED]?

05:54

22 A. [REDACTED]

23 [REDACTED]

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[REDACTED].

Q. [REDACTED]

[REDACTED]?

A. [REDACTED].

Q. [REDACTED]?

A. [REDACTED]

[REDACTED]

[REDACTED].

Q. [REDACTED]

[REDACTED]?

A. [REDACTED].

Q. [REDACTED]

[REDACTED]

[REDACTED].

Q. [REDACTED]?

A. [REDACTED].

Q. [REDACTED]

[REDACTED]?

A. [REDACTED].

Q. [REDACTED]

05:55

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3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

05:57

7 (Courtroom unsealed.)

8 THE COURT: All right. The courtroom is reopened
9 and unsealed.

10 Please continue, counsel.

11 MR. REGER: Thank you, Your Honor.

12 Q. (BY MR. REGER) Now, if the deal had closed, was there
13 any other possible value beyond the 60 million that --
14 available to Headwater?

05:58

15 A. Yes, sir, there was. In addition to the \$60 million that
16 would have affected the transfer of the assets, they also --
17 InterDigital was also going to give Headwater some stock
18 warrants for InterDigital stock. And that's a common thing in
19 these kind of transactions. It doesn't cost them anything,
20 and it gives the other party some real upside potential.

21 Q. Okay. What are stock warrants, sir?

05:58

22 A. Basically the stock warrant gives you the right to buy a
23 stock at a particular price in the future. And you don't have
24 to buy it if you don't want to, but if the price of the stock
25 goes up, then you can literally buy it at the price that's

1 agreed to and sell it at the same time and make a profit, and
2 so it's an opportunity to have potential additional
3 compensation. As I say, it's very common in these types of
4 transactions.

5 Q. And how many of these optional warrants were available to
6 Headwater if they had actually completed the sale?

7 A. Yeah. If the sale had been completed, they would have
8 had 750,000 of these warrants.

05:59 9 Q. And sir, what -- as an economist, as someone who's looked
10 at a lot of these deals, how did you value these warrants?
11 How did you come up with the number?

12 A. Well, the closing price on the day that the letter of
13 intent was assigned for, InterDigital stock was 56.82, which
14 that would likely -- somewhere around that would have been the
15 likely price that would have said you can buy the stock at
16 this price at some point in the future.

05:59 17 And then I went ahead to the time I was putting my report
18 together and said, Okay, what is the highest price that this
19 stock would achieve, and it got to \$156.99. Now, in reality
20 we -- nobody ever manages to buy stock at the very top. You
21 hope you do, but you don't in practice. But I made the
22 assumption that the highest price it had achieved here would
06:00 23 have been available to them, so they would have made \$100 and
24 a few cents on each of these shares, which would have been a
25 total four and a half years later of \$75 million, a little

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1 more. And then I brought it back to the present value using
2 exactly the same discount rates and things that Mr. Dell used
3 in his calculations, and that got me to a value of about a
4 little over \$48 million.

5 Q. Just to make sure I heard you correctly, Dr. Perryman,
6 you made sure that in this scenario they bought low and sold
7 high.

8 A. Exactly. Exactly.

06:00

9 Q. All right. Now, and just -- what is the maximum value
10 that these stock warrants would have been worth to Headwater
11 on the day they closed the deal if they had actually closed
12 the deal?

13 A. Well, from the day they closed the deal until I did my
14 report, they could have made -- in the dollars of the time
15 they made the purchase they could have made \$48 million from
16 that plus the \$60 million payment, so it would have been \$108
17 million.

06:01

18 Q. Is that consistent with what Dr. Raleigh said earlier in
19 this trial, sir?

20 A. Well, Dr. Raleigh talked about thinking that the warrants
21 would be worth a whole lot more with his patents in the mix,
22 and obviously InterDigital didn't share that view, but he
23 talked about it potentially being worth a lot more than that.

24 Q. Why do you say InterDigital did not share that view?

25 A. Well, InterDigital opted not to go through with the

1 transaction.

06:01

2 Q. And so what was the total value to Headwater if
3 InterDigital had decided to go through the deal if they
4 decided the patents were worth pursuing?

5 A. It could have been as much as \$108 million for the 400
6 patents.

7 Q. And how did you get that number, sir?

8 A. Basically I added the 60 million and the 48 million.

9 THE COURT: Counsel, approach the bench, please.

10 (The following was had outside the hearing of the
11 jury.)

06:02

12 THE COURT: It's 6:00. We're obviously not going to
13 finish this witness today. You've got less than three hours
14 of trial time tomorrow. Is this a decent time to break this
15 examination? And my intent is to do like we did yesterday and
16 leave the party calling the witness in charge.

17 MR. REGER: Your Honor, if I could double check, I
18 think I'm right at the end of this module. I may have one or
06:02 19 two more questions. I can be very close to the end.

20 THE COURT: All right. Well, Ask one or two
21 questions. When you're at the end of this module look at me
22 and I'll know that's the time.

23 MR. MIRZAIE: Your Honor, just to not interrupt,
24 this is the exact module that I followed up on this morning
25 where Dr. Perryman's report refers to other litigations to do

1 this math. And they took it off the slide, but this is the
2 issue I wanted to raise with respect to his opinions. Their
3 fix for that is to just have him say Headwater selected 13
4 patents, I believe.

06:03

5 MR. REGER: Thirteen patent families as valuable --

6 MR. MIZRAIE: And those -- that it --

7 THE COURT: Well, are you asking me to find that
8 somehow the door's been opened for you to talk about other
9 litigation?

10 MR. MIRZAIE: No. I just wanted to preview that
11 this is something that we wanted to follow up on and this
12 might be a good time to take that break.

13 THE COURT: Okay. Well, I think we finish this
14 module, whatever that means, in Mr. Reger's direct, and then
15 we pick up in the morning.

16 While I have you-all here, everybody knows there's an
17 express MIL that was granted in regard to this examination.
18 It precludes any discussion of why this letter of intent was
19 not exercised. You got fairly close to that, Mr. Reger, when
20 you started talking about they didn't care about the patents
21 because they didn't close the deal.

06:03

22 MR. REGER: I understand.

23 THE COURT: That's about as close as you need to get
24 to that.

25 MR. REGER: Yes, sir.

1 THE COURT: All right. Let's go forward.

2 (The following was had in the presence and hearing
3 of the jury.)

06:04 4 THE COURT: All right, counsel. Please continue.

5 Q. (BY MR. REGER) Now, we know that InterDigital did not
6 buy the patents.

7 A. Correct.

8 Q. To be clear, given all of Headwater's efforts, did anyone
9 in the world ever consider buying these patents?

06:04 10 A. Not that I'm aware of; certainly no one bought them.

11 Q. Thank you, Dr. Perryman.

12 THE COURT: All right. Ladies and gentlemen, it's
13 five minutes after 6:00. This witness has got some
14 considerable additional time on the witness stand, both direct
15 and cross examination. We will finish him in the morning.
16 We're going to break for the day.

17 If you'll take your notebooks when you leave and leave
18 them in the jury room. Please remember to follow all my
19 instructions about your conduct, including not to communicate
06:05 20 with anyone in any way about this case. We are not far from
21 finishing the evidence. I expect we'll finish the evidence
22 tomorrow, so please redouble your efforts.

23 Please be back tomorrow morning ready to go as you were
24 this morning, and we'll do our best to start right at 8:30
25 tomorrow morning.

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1 Have a safe trip. The roads apparently are wet, so take
2 your time and be careful. And we will see you at 8:30 in the
3 morning.

4 You're excused until then, ladies and gentlemen.

5 (Whereupon, the jury left the courtroom.)

06:06 6 THE COURT: All right. Be seated, please.

7 You can step down, Dr. Perryman.

8 THE WITNESS: Thank you.

9 THE COURT: Counsel, for your information, as of
10 right now the Plaintiff has an hour and 26 minutes of
06:06 11 remaining trial time; Defendant has an hour and 14 minutes of
12 remaining trial time.

13 I have received the updated proposed final jury
14 instructions and verdict form. I find it much better than
15 what came before, although a long way from perfect. We'll
16 talk about that tomorrow.

17 My understanding is that Defendants will rest after
06:06 18 Dr. Perryman. Is that correct?

19 MR. McKEON: That's correct, Your Honor. Oh, Your
20 Honor, I apologize. There's a depo clip we have to play.

21 THE COURT: You have a depo clip.

22 MR. McKEON: Two depo clips.

23 THE COURT: How long are they?

24 MR. McKEON: I believe it's about 15 minutes.

25 THE COURT: And you're going to end on a deposition.

1 MR. McKEON: We're going to end on a deposition.

2 THE COURT: Okay. And then Plaintiff will have some
3 rebuttal. Correct?

4 MR. FENSTER: Yes, Your Honor.

06:07

5 THE COURT: Okay. I would hope we don't have a lot
6 of disputes overnight. We've covered most of this ground
7 already. Please exercise your best efforts to bring that
8 result about, but if you have problems that can't otherwise be
9 worked out, I'll be available in chambers first thing in the
10 morning.

11 Is there anything else I need to hear on from the parties
12 before I proceed?

06:08

13 MR. McKEON: Your Honor, in chambers this morning we
14 raised the issue of Mr. Dell in rebuttal. And I don't know if
15 this is something we can talk about now only because obviously
16 there will be preparation for that if he's permitted to go and
17 then we would have to prepare for that. But I don't know if
18 the Court's ready to deal with that now or --

19 THE COURT: Well, let me say this, Mr. McKeon. I'm
20 not at all convinced that this is a problem that's really
21 going to present itself depending on how much time Plaintiff
22 has left when you rest your case in chief. It may be
23 impractical.

24 I assume Plaintiff's first priority is going to be your
25 technical expert.

1 MR. FENSTER: You're correct, sir.

06:08

2 THE COURT: Okay. I think we'll have a much better
3 sense of this tomorrow morning. I'm happy to talk with you
4 about it first thing in the morning and that should still give
5 you plenty of time, if this is going to come about, to
6 prepare. Okay?

7 MR. McKEON: That's great. Thank you, Your Honor.

8 THE COURT: Raise it with me in the morning.

9 MR. McKEON: Thank you, Your Honor.

10 THE COURT: Anything else?

11 MR. FENSTER: Your Honor, may I confirm that
12 closings will be Friday morning and not tomorrow?

06:08

13 THE COURT: Well, I'm not sure I want to make that
14 bet right now. I think the jury will get the case and I think
15 it's unlikely it will be tomorrow. I think in all likelihood
16 we'll get everything done. I don't know how extensive your
17 motion practice is going to be under Rule 50(a). I still need
18 to focus on the proposed charge and verdict form. I've only
19 had an opportunity to glance at it. If that comes together in
20 a reasonable amount of time, it's possible we could get
21 everything done tomorrow, but I think it's probably less
22 likely than not. Again, like the question Mr. McKeon raised,
23 I think I'll be in a position to give you better guidance
24 first thing in the morning. Okay?

06:09

25 MR. FENSTER: Thank you, Your Honor.

Shawn M. McRoberts, RMR, CRR
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1 MR. McKEON: Thank you, Your Honor.

2 THE COURT: All right, counsel. Unless there's
3 anything further, we'll stand in recess until tomorrow
4 morning.

5 (The proceedings were concluded at 6:10 p.m.)
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I HEREBY CERTIFY THAT THE FOREGOING IS A
CORRECT TRANSCRIPT FROM THE RECORD OF
PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.
I FURTHER CERTIFY THAT THE TRANSCRIPT FEES
FORMAT COMPLY WITH THOSE PRESCRIBED BY THE
COURT AND THE JUDICIAL CONFERENCE OF THE
UNITED STATES.

S/Shawn McRoberts 04/23/2025

DATE _____
SHAWN McROBERTS, RMR, CRR
FEDERAL OFFICIAL COURT REPORTER

Shawn M. McRoberts, RMR, CRR
Federal Official Court Reporter