

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

HEADWATER RESEARCH, LLC., (CAUSE NO. 22:2-CV-422-JRG
)
Plaintiff, ()
vs. ()
SAMSUNG ELECTRONICS CO., LTD., ()
et al., () MARSHALL, TEXAS
() JANUARY 14, 2025
Defendants. () 9:00 A.M.

VOLUME 2

TRIAL ON THE MERITS

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

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Headwater Research LLC
Ex. 2009, IPR2026-00049
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01:47 1 examination?

2 MR. McKEON: Nothing further, Your Honor. Thank
3 you.

4 THE COURT: You may step down, Doctor Wesel.
5 Plaintiff, call your next witness.

6 MR. FENSTER: Your Honor, Plaintiff calls Mr. Jeff
7 Sharkey as an adverse witness.

8 THE COURT: All right. Mr. Sharkey -- he needs to
9 be brought into the courtroom and then we'll swear him in. If
01:48 10 we can get the CSO to step out and find Mr. Sharkey, please,
11 and then bring him in the courtroom.

12 MR. FENSTER: And, Your Honor, may I have leave to
13 publish two demonstrative boards during Mr. Sharkey's
14 presentation?

15 THE COURT: Yes, you may.

16 MR. FENSTER: Thank you, Your Honor.

17 THE COURT: Mr. Sharkey, if you'll come forward and
18 be sworn by our Courtroom Deputy, please.

01:49 19 (Whereupon, the oath was administered by the Clerk.)

20 THE COURT: Please have a seat on the witness stand,
21 sir.

22 And if there are witness binders to distribute, let's do
23 that.

01:49 24 And, ladies and gentlemen of the jury, so you'll
25 understand, Mr. Sharkey is a Google employee. The intention

1 originally was for him to be called by Samsung in their case
2 in chief. His schedule is such that he had to appear today
3 and not when the Defendants were putting on their case in
4 chief.

01:49

5 So he's being called by the Plaintiff adversely, which
6 means the Plaintiff can examine him with leading questions as
7 you would on cross examination. And then when the Defendant
8 cross-examines him, they'll do it as a direct examination
9 where they ask non-leading questions.

10 So we're a little bit out of order, but I wanted you to
11 understand the background of how we got here.

12 All right. Mr. Fenster, you may proceed with direct
13 examination on an adverse basis.

14 MR. FENSTER: Thank you, Your Honor.

15 Good afternoon, ladies and gentlemen of the jury.

16 JEFF SHARKEY,

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

18 DIRECT EXAMINATION

19 BY MR. FENSTER:

01:50

20 Q. Good afternoon, Mr. Sharkey. My name is Mark Fenster.

21 We haven't met yet.

22 A. We have not.

23 Q. Can you please introduce yourself to the jury, please?

24 A. Sure. My name is Jeff Sharkey.

25 Q. And, Mr. Sharkey, you are a software engineer at Google.

1 Is that correct?

2 A. I was a software engineer for 16 years at Google before
3 leaving in September of last year.

4 Q. And up until you left in September of last year, you'd
5 worked at Google since 2008. Is that correct?

6 A. December of 2008, yes.

7 Q. And you were responsible or one of the lead engineers
01:50 8 responsible for the development of Android operating system.
9 Correct?

10 A. Among many people, yes.

11 Q. Now, in addition to the Android operating system, Google
12 makes certain apps like Gmail, calendar, or maps. Correct?

13 A. That's accurate, yes.

14 Q. And you refer to those as first-party apps, meaning that
15 they're made by Google as opposed to third-party apps made by
01:51 16 other developers. Fair?

17 A. That's accurate, yes.

18 Q. And you were not involved in writing any of the
19 first-party apps, any of the Google first-party apps prior to
20 May of 2010. Correct?

21 A. Let me think. Prior to 2011, I wrote some code for the
22 Google books app which was a first-party app on the device.

23 Q. With that exception, is it correct that you did not work
01:51 24 on any first-party apps, you didn't work on Google mail,
25 Google maps, Google calendar or contacts prior to May 2010?

1 A. I closely collaborated with engineers on those teams, but
2 I did not write code directly in those apps other than Google
3 books.

4 Q. Google is not a party to this case, but you understand
5 that Google is cooperating with the Defendant Samsung to
6 defend this case. Do you understand that?

01:52 7 A. My understanding is that Google asked me to be deposed
8 about a year ago, and that Samsung is asking me to be here
9 today.

10 Q. And you sat for a deposition in this case where attorneys
11 for Samsung and Headwater were able to ask you questions.
12 Correct?

13 A. That's correct, yes.

14 Q. And you were represented by an attorney named Mr. Lance
15 Yang at that deposition?

16 A. That's correct, yes.

17 Q. And you met with your attorney Lance Yang at least 10
18 times to prepare for that deposition. Correct?

01:52 19 A. That does not seem accurate.

20 Q. Do you recall that that was your testimony -- you met
21 with him many times to prepare for your deposition. Fair?

22 A. We met over the course of a day, a day or two, I believe.

23 Q. Are you aware that Mr. Yang, in addition to representing
01:53 24 Google, also represents Samsung in this case?

25 A. My interactions with Mr. Yang, my understanding is his

1 representation that's been provided to me by Google.

2 Q. You have a binder in front of you. The first tab is your
3 deposition. I'll ask you to refer to page 85 of your
4 deposition. Let me know when you have it. Pages -- lines 6
01:53 5 through 8.

6 A. Page 85:6 through 8?

7 Q. Yes. I'll ask you again, Mr. Sharkey: You met with
8 counsel approximately 10 times before your deposition.
9 Correct?

10 A. Yes, this is accurate. This is speaking of the counsel
11 Howard Chang or Howard Chen, who is an employee of Google. I
12 only met with Lance Yang who I believe you asked earlier about
13 the day or two prior to this deposition.

14 Q. Thank you.

01:54 15 Now, Samsung is one of, if not Google's largest,
16 customers of the Android operating OS product. Correct?

17 A. It's one of dozens, if not hundreds, of our partners,
18 yes.

19 Q. And Google and Samsung work together and cooperate in
20 connection with many of the products, including Samsung's
21 phones that run Android. Fair?

22 A. We're partners, yes.

01:54 23 Q. And you have personally worked extensively with Samsung
24 engineers?

25 A. Only through email and bugs.

1 Q. You have communicated with Samsung engineers by email
2 hundreds of times. Correct?

3 A. That's accurate, yes.

4 Q. Okay.

5 MR. FENSTER: If we can have PDX 4.2, please.

01:55

6 Q. (BY MR. FENSTER) And, Mr. Sharkey, I'll refer to this
7 board as well. I'll represent to you, Mr. Sharkey, that the
8 priority date of the '976 Patent that's at issue in this case
9 is May 25, 2010. Will you accept that representation?

10 A. I don't have evidence of that in front of me. I accept
11 this visualization.

12 Q. Thank you.

13 Android 1.0 and Android 1.6, which was called donut,
14 those were both released before the May 2010 priority date.
15 Correct?

16 A. Yes, that's correct.

17 Q. Okay. So sometimes we'll refer to those as prior art
18 Android. Is that fair?

19 A. Yes.

01:56

20 Q. And Android 4.0, sometimes called ice cream sandwich,
21 this was released in October of 2011, after the priority date.
22 Correct?

23 A. That's accurate, yes.

24 Q. And all of the accused products run Android 6.0 or later.
25 Do you understand that?

1 A. Yes, I understand that.

2 Q. Okay.

3 MR. FENSTER: Now, if we can pull up PDX 4.5,
4 please.

01:56 5 Q. (BY MR. FENSTER) Now, in the accused products, activity
6 manager in the Android operating system classifies
7 applications that are running using something called process
8 states. Correct?

9 A. Yes, that's correct.

10 Q. And in the accused products, network policy manager
01:56 11 evaluates those process states using a threshold to classify
12 applications as either foreground or background. Correct?

13 A. Yes, that's accurate.

14 Q. Now, I -- there's -- I've drawn a line -- we've added a
15 line to -- this is PDX 4.5. This is showing an excerpt of
16 activity manager, JX 63. And we've added a line there.

01:57 17 In the accused products, Android -- strike that.

18 You're aware that network policy applies a threshold to
19 classify those process states and determine whether an app is
20 foreground or background. Correct?

21 A. Yes, it does.

22 Q. And that threshold comes from network policy manager.
23 That's JX 67. And that's shown up here at the top. Correct?

24 A. That's correct, yes.

01:57 25 Q. Okay. And network policy will apply that threshold and

1 determine that any apps above the line have -- are foreground.

2 Correct?

3 A. It will treat them that way, yes, if their process state
4 is above that line, yes.

01:58 5 Q. And network policy will determine that anything below
6 that line will classify that as background. Correct?

7 A. For the purposes of network policy manager, yes.

8 Q. Now, in the accused product, an app classified by Android
9 as a foreground app, is an app that the user is aware is
10 operating and that they're interacting with. Correct?

11 A. I would say at a high level those are two examples of
12 foreground apps.

01:59 13 Q. Android developer documents also describe apps classified
14 as foreground apps as those that the user is aware of and
15 interacting with. Correct?

16 A. They could. There's a lot of documentation.

17 MR. FENSTER: Let's pull up PTX 212, please.

18 Q. (BY MR. FENSTER) And do you recognize this exhibit as a
01:59 19 document that's published on Android's developer.Android.com
20 website? This is a document that Android publishes for
21 developers to rely on?

22 A. Yes, I recognize this.

23 Q. Okay.

24 MR. FENSTER: And if we can go to -- can you clear
25 that, please?

1 Q. (BY MR. FENSTER) So PTX describes an activity as a
2 single focused thing that the user can do, and almost all
3 activities interact with the user. Correct?

01:59 4 A. That's an accurate quote of what's on the screen, yes.

5 MR. FENSTER: And if you go to the next one, Mr.
6 Mahon.

7 Q. (BY MR. FENSTER) Okay. In the document PTX 212 at page
8 4, it describes the activity life cycle. Correct?

9 A. Yes, it does.

10 Q. And it states that when a new activity is started, it is
11 usually placed at the top of the current stack. That's the
12 stack of the display. Correct?

02:00 13 A. Yes.

14 Q. And becomes the running activity. Correct?

15 A. Yes.

16 Q. And it states that an activity essentially has four
17 states. Correct?

18 A. I see one of them listed here.

19 Q. Okay. And that first one says, "If an activity is in the
20 foreground of the screen," that's the display screen.
21 Correct?

22 A. Yes.

23 Q. And it goes on, "At the highest position of the topmost
24 stack, it is active or running." Do you see that?

25 A. That's an accurate quote, yes.

02:00 1 Q. And the Android document says, "This is usually the
2 activity that the user is currently interacting
3 with." Correct?
4 A. That is correct, yes.

5 Q. And when an activity -- when an app is in this state,
6 network policy classifies it as top and, therefore,
7 foreground. Correct?
8 A. Unfortunately, I think you may have introduced a new
9 distinction there. We've been talking about activities up
10 until this point, and you just referred to it as an app.
11 There are other parts of an app beyond activities that could
12 be classified as foreground.

13 Q. That's fair. When an app has an activity that is running
02:01 14 in the foreground on top, that app will be classified as
15 foreground.
16 A. Yes.

17 Q. Thank you.

18 MR. FENSTER: Okay. If we can go back to 4.5.

02:01 19 Actually that's okay. Okay. Let's go to 4.7, please.

20 Q. (BY MR. FENSTER) Okay. The jury has heard about several
21 accused features in this case--battery saving, power mode, app
22 standby, and data saver. You're familiar with those?
23 A. Broadly, yes.

02:02 24 Q. And if I refer to those as accused features, you'll
25 understand what I mean. Is that fair?

1 A. I will understand it, yes.

2 Q. All of those accused features rely on network policy
3 manager. Correct?

4 A. They do, yes.

5 Q. Network policy manager and all of the accused features
6 were each introduced after the priority date of the '976
7 Patent. Correct?

8 A. I would slightly dispute that and say that the idea of a
9 network policy existed before the priority date.

02:02 10 Q. Mr. Sharkey, network policy did not exist in code prior
11 to May 10 -- May of 2010. Correct?

12 A. I would say a source code file with the exact name
13 network policy did not exist, but policy in the plain
14 interpretation did exist before --

15 Q. I'm asking about -- Mr. Sharkey, you'll have time to
16 answer questions. I'm asking you about the specific network
17 policy that's in the accused products.

02:03 18 THE COURT: Counsel, if you think the witness is
19 non-responsive, raise it with the Court. Don't purport to
20 instruct the witness.

21 MR. FENSTER: Yes, Your Honor.

22 THE COURT: Okay?

23 Q. (BY MR. FENSTER) I'm referring to the specific network
24 policy is that's in the accused products. Do you understand?

25 A. The source code files named network manager or network

1 policy manager did not exist before the priority date.

2 Q. And power -- the power saving feature did not exist
3 before May 2010. Correct?

4 A. That's correct.

02:03 5 Q. Doze mode did not exist before 2010. Correct?

6 A. That's correct.

7 Q. Neither did app standby or data saver. Correct?

8 A. That's correct.

9 Q. Now, we talked about in the accused products, network
10 policy uses a threshold to determine if an app is foreground
11 or background and classifies it as such. Correct?

12 A. Yes.

13 Q. Okay. In the Android operating system that existed
02:04 14 before 2010 in the prior art Android, there was no threshold
15 to classify an app as either foreground or background.
16 Correct?

17 A. There were parts of the operating system that -- like
18 activity manager that tracked if an app was in the foreground
19 or background.

20 Q. Mr. Sharkey, can you look at your deposition at page 113,
02:04 21 lines 13 to 22?

22 A. What were the lines?

23 Q. 113 -- page 113, lines 13 to 22.

24 A. I see that.

25 Q. Okay. Isn't it the case that the prior -- prior to May

1 2010, Android did not use a threshold to determine foreground
2 or background states?

02:05 3 A. Correct, it did not use a threshold even though it
4 tracked like things that were effectively foreground or
5 background.

6 Q. Thank you.

7 MR. FENSTER: Okay. If we can bring up PDX 4.6,
8 please. Okay. Next slide. Advance this, please.

9 Q. (BY MR. FENSTER) Now, the accused products, in addition
02:05 10 to classifying apps as foreground or background, have a
11 connectivity manager API. Correct?

12 A. Yes, they do.

13 Q. One of the ways that network policy can block background
14 apps from using the internet in the accused devices is by
15 using the connectivity manager API to tell background apps
16 that the network is disconnected. Correct?

17 A. That's one possible way, yes.

02:06 18 Q. And it will do that even though the phone has an actual
19 connection to the WWAN modem. Correct?

20 A. Yes.

21 Q. Another way -- strike that.

22 And the way that the -- okay. So if we have a background
23 app that requests a network, the connectivity manager will
02:07 24 respond that the network is disconnected. Correct? In the
25 accused products.

1 A. Yes, it does.

2 Q. And if the app -- even if it tried to access the
3 internet, even though it was told there's no connection, if it
4 did, that transmission would be blocked by a firewall chain.
5 Correct?

6 A. That's accurate, yes.

7 Q. Okay. Now, if the -- if a foreground app asks the API
02:07 8 for a connection, the API manager will indicate that it is
9 connected or available. Correct?

10 A. Yes.

11 Q. And if a foreground app attempts to access the internet,
12 network policy will allow that transmission to connect through
13 the WWAN modem. Correct?

02:07 14 A. Yes.

15 MR. FENSTER: And if we can go to 4.9, please.

16 Q. (BY MR. FENSTER) Okay. So we just established that the
17 connectivity for -- in the accused products, the connectivity
18 manager will tell background apps that the network is
19 disconnected. Correct?

20 A. Yes.

21 Q. And that the -- in the accused products, network policy
02:08 22 will block background app attempts to use the network with the
23 firewall. Correct?

24 A. Yes.

25 Q. Okay. Neither of those two ways to block background apps

1 from accessing the internet existed in the prior art Android.
2 Correct?

3 A. Those two ways did not exist prior.

4 Q. Android 1.6 did not have the ability for the API to
5 adjust the answer until the background app that the network
6 was disconnected. Correct?

02:08 7 A. That specific API did not have that ability. Developers
8 could do it other ways.

9 Q. And there was -- there were no firewalls or enforcement
10 within Android that would block attempts by background apps to
11 access the internet. Correct?

12 A. Before the priority date, that's correct.

13 Q. Thank you.

02:09 14 It's correct that network blocking based on the status of
15 the application, whether foreground or background, that that
16 did not exist in Android 1.6. Correct?

17 A. There were ways network requests could be stopped.

18 Q. Mr. Sharkey, blocking network access based on app status
19 such as foreground or background did not exist prior to May
20 2010. Correct?

02:09 21 A. Using a firewall in the connectivity manager, that is
22 correct, they did not exist.

23 Q. Thank you.

24 MR. FENSTER: If you can pull up PTX 23, please.

02:10 25 Q. (BY MR. FENSTER) Okay. So PTX 23 is a printout of the

1 log of commits for the program NetworkPolicyManager.java. Is
2 that correct?

3 A. Yes, it is.

02:10

4 Q. There is a -- Google keeps a specific record of the time
5 and the date that everything was entered into for the first
6 time into each of its programs, including
7 NetworkPolicyManager.java. Correct?

8 A. For the Android open source project, yes.

9 Q. And this commit was made by you, Jeff Sharkey, in May
10 13th, 2011. Correct?

11 A. That's when it was merged into the Android tree, yes.

02:11

12 Q. And this document describes this as a first pass at
13 network policy. Correct?

14 A. That's my description of it, yes.

15 Q. And your description is that this was as of May 2011,
16 which is after our priority date, that this is a new system
17 service that maintains low-level network policy rules.
18 Correct?

19 A. Yes. But please note that network policy is in all caps
20 and concatenated together to indicate it has a special meaning
02:11 21 to refer to a source code file.

22 Q. You indicated in this document that it will eventually
23 connect to net filter kernel and net D, and those are with the
24 firewalls are actually enforced through IP tables. Correct?

25 A. Yes, it is.

1 Q. And you state in this document that's dated May 2011,
2 eventually -- eventually a network policy of
02:12 3 policy_reject_background will reject network traffic from
4 background processes. You wrote that. Correct?

5 A. I did.

6 Q. Okay.

7 MR. FENSTER: Let's go a little bit further in PTX
8 23 to page 137.

9 Q. (BY MR. FENSTER) And this was a later commit that you
10 made in June of 2011. Correct?

11 A. Yes, it is.

12 Q. Okay. And here you wrote that this commit enforces
02:12 13 background data flag rules through netd. Correct?

14 A. I did write that. I would like to express that as
15 engineers we sometimes summarize what we're attempting to do
16 in a message, in the source code that's been changed. So
17 these can be brief summaries of what is done.

18 MR. FENSTER: Your Honor, I would just ask that the
19 witness be instructed to respond only to my question.

02:13 20 THE COURT: Well, the witness became non-responsive
21 when he went beyond his complete answer to the question. He
22 said, I did write that. That was a complete answer. The I
23 would like to express and everything that followed was not
24 called for by the question, it's not responsive, and I'll
25 strike that from the record.

1 Mr. Sharkey, you need to limit your answers to the
2 questions asked. You may have things you want to say, but
02:13 3 you're not here to say what you want; you are here to answer
4 questions of counsel from both sides. And under our rules
5 your answers need to be limited to the scope of the questions
6 asked. Do you understand that?

7 THE WITNESS: I understand, Your Honor.

8 THE COURT: Thank you.

9 Let's proceed on that basis. Go ahead, Mr. Fenster.

10 MR. FENSTER: Thank you, Your Honor.

02:14 11 Q. (BY MR. FENSTER) Let's talk -- I'll change topics. The
12 primary benefit of the accused feature data saver is extending
13 the user's battery life. Correct?

14 A. It would be extending the user's mobile data plan because
15 it's data saver.

16 Q. I'll ask you to refer from your deposition to page 181
17 and 182.

02:15 18 A. Okay. Which lines?

19 Q. 181, line 25, through 182 at line 4. The benefits of
20 data saver are twofold--extending the user's battery life and
21 reducing their mobile carrier bill. Correct?

22 A. Yes, that's accurate.

02:15 23 Q. Okay. And the primary benefit of app standby is
24 extending the user's battery life. Correct?

25 A. Yes, it is.

1 Q. And the primary benefit of the accused feature doze mode
2 is also extending the -- is to make the device battery last
3 longer. Correct?

4 A. Yes, it is.

5 Q. And the benefit of battery saver blocking background
6 network traffic is to save battery life. Correct?

7 A. Can you -- which saver was that referring to?

8 Q. Battery saver.

02:15 9 A. Yes. The primary purpose of battery saver is to save
10 battery life, yes.

11 Q. Thank you.

12 And the accused features extend battery life by blocking
13 or disallowing background internet access because the mobile
14 radio, the WWAN modem, is one of the larger consumers of power
15 when it's in use. Correct?

16 A. Yes. Those features, that's one way that they preserve
17 battery life.

18 Q. Okay.

02:16 19 MR. FENSTER: If we can pull up DTX 20 at page 18.

20 Q. (BY MR. FENSTER) Mr. Sharkey, I'm going to ask you some
21 questions about donut Android 1.6 in the prior art. Okay?

02:16 22 Do you recognize DTX 20.18? This is a screenshot of the
23 prior art device that Defendants are relying on for validity.

24 Do you recognize this as a screenshot from Android 1.6?

25 A. I recognize it as a screenshot from an early version of

1 Android, yes.

2 Q. Can you confirm whether it was Android 1.6 or not?

3 A. Not specifically from this screenshot.

4 Q. Okay. And there is a background data check box at the
5 beginning that says enable background data usage. Do you see
6 that?

7 A. I do.

02:17 8 Q. Okay. Now, that was a check box that allowed a user to
9 express the user's preference that background data not be
10 used. Correct?

11 A. That's accurate, yes.

12 Q. But that was just an expression of a user's preference;
13 there was no enforcement of that preference in Android.
14 Correct?

15 A. The code running on the device did not enforce it, no.

02:18 16 Q. There was nothing in Android 1.6 that would enforce the
17 user's background data setting preference prior to May 2010,
18 the priority date. Correct?

19 A. In the code running on the device, no.

20 Q. There was nothing in Android prior to the May 2010
21 priority date that would actually block applications from
22 using the internet in the background. True?

02:18 23 A. Sync manager would have been an example that would have
24 blocked apps like Gmail or calendar from using data in the
25 background.

1 Q. We'll come back to that one.

2 It was up to each app developer whether to respect that
3 user preference. Correct?

02:18 4 A. Other than the sync manager example I just mentioned,
5 that's correct.

6 Q. Now, if an application wanted to know the user's
7 preference about whether to use background data, the app
8 developer would have to add code to request that setting using
9 an interface called get background data setting. Correct?

10 A. They would, yes.

11 Q. And that get background data setting function indicates
02:19 12 the user's preference to restrict background data that's not
13 enforced in the Android code. Correct?

14 A. It indicates -- it returns their preference, yes.

15 Q. The get background data setting would return the same
16 value to the application regardless of whether the -- any
17 application was running in the foreground or background.
18 Correct?

19 A. That's correct, yes.

02:19 20 Q. It wasn't in any way dependent on any classification of
21 an end user app. Correct?

22 A. The return value of the API was not dependent. That's
23 correct.

24 Q. Now, the get background data setting, that's different
25 than the connectivity manager API that's used in the accused

1 products. Correct?

2 A. I believe the get background data setting is on
3 connectivity manager. It's a method on that class.

02:20 4 Q. Okay. I see. Now, the get background data setting does
5 not tell an -- strike that.

6 The get back -- if an app was programmed to use get
7 background data setting, it would retrieve a value that
8 indicated the user's preference about whether to use
9 background data or not. Correct?

10 A. Yes, that's accurate.

11 Q. The get background data setting itself did not indicate
12 the availability or unavailability of the WWAN modem.

13 Correct?

02:21 14 A. That's accurate, yes.

15 Q. In the prior art Android, there was no ability -- I think
16 we already covered this, there was no ability for an API to
17 tell a background app that a connection was not available if
18 the WWAN was, in fact, connected. Correct?

02:21 19 A. Correct. That did not exist before the priority date.

20 Q. Mr. Sharkey, I'm going to ask you about a developer
21 conference presentation that you gave in 2009. Do you recall
22 that?

23 A. I do, yes.

24 Q. Okay.

25 MR. FENSTER: And if we could pull up DTX 216.

02:21 1 Q. (BY MR. FENSTER) This was the slide presentation that
2 you gave at a developer conference in 2009. Correct?

3 A. I recognize this as a generic title slide for the
4 conference, yes.

5 Q. In May of 2009, you recall that you gave a presentation
6 to third-party app developers giving them recommendations
7 about how they might want to program their apps. Correct?

8 A. Yes, that's accurate.

02:22 9 Q. All apps that are not made by Google, it's fair to call
10 those third-party apps?

11 A. That's fair, yes.

12 Q. And you would agree that the vast majority of apps that
13 are available to Android users are third-party apps and not
14 first-party apps. Fair?

15 A. The majority, yes.

02:22 16 Q. In that 2009 presentation, you were recommending to
17 app -- third-party app developers to please program their apps
18 to include that get background data setting to get that user
19 preference. Correct?

20 A. Yes, we were.

21 Q. And you were asking app developers to voluntarily include
22 code to voluntarily respect that user preference.

23 A. As part of being good citizens, yes.

02:23 24 Q. Each app developer could decide for itself whether or not
25 to respect that background preference. Correct?

1 A. They could, yes.

2 Q. Now, if a third-party app decided not to respect it and
3 made -- tried to contact the internet as a background app,
4 there was nothing in Android that would block those internet
5 communications for those third-party apps. Correct?

6 A. That's correct.

02:24 7 Q. Now, during your 2009 presentation -- and there was a
8 video of that that's available on YouTube.

9 A. That's accurate, yes.

10 Q. I think Defendants may show it to -- may show some parts
11 of that later. During your 2009 presentation, you never told
12 those third-party app developers that Google was developing
02:24 13 the network policy that it would later add after the priority
14 date. Correct?

15 A. We did not announce that at that conference, no.

16 Q. You did not say anything in that 2009
17 preference -- presentation to third-party app developers that
18 you were -- that Google was developing anything to enforce or
19 block background app traffic. Correct?

20 A. Later in the presentation we told them the users would be
21 watching how they were using the battery and may choose to
02:24 22 uninstall the apps, but Google did not announce any
23 enforcement.

24 Q. It is correct, Mr. Sharkey, that at that 2009
25 presentation you did not tell the third-party app

1 developers -- you did not mention that Google would be
2 developing in the future a way to enforce or block background
3 traffic. Correct?

4 A. That's accurate, yes.

02:25

5 Q. And in that 2009 presentation, you didn't say anything
6 about using an app to tell the background -- to tell
7 background apps that a connection was not available. Correct?

8 A. Do you mean API?

9 Q. Yes.

10 A. Correct, we did not tell them about that.

11 Q. Okay. Rather, in your 2009 presentation, you were going
12 in a different direction to recommend that the app developers
13 voluntarily add code themselves to listen for that user
14 preference and to follow it. Correct?

02:26

15 A. I would say these were initial steps.

16 Q. And you agree that that was a different direction than
17 what Google later did in the accused products. Correct?

18 A. I disagree. I think it was an early step towards that.

02:26

19 Q. Let's go to your deposition at page 221:7 through 19.

20 A. Which lines?

21 Q. 7 through 19. And specifically I'll refer you to
22 page -- to line 12.

23 A. My understanding is this is a question that you were
24 asking me.

25 Q. And wait for a --

1 A. Sorry.

2 Q. I'll withdraw and I'll ask you a question.

3 MR. FENSTER: Sorry, Your Honor.

02:26 4 THE COURT: Just a minute. Have you reviewed the
5 section of the deposition that counsel referenced you to?

6 THE WITNESS: Lines 5 through 15, I've reviewed.

7 THE COURT: All right. Then in light of that,
8 counsel, ask a question.

9 MR. FENSTER: Thank you, Your Honor.

10 Q. (BY MR. FENSTER) It is accurate to describe the
11 recommendations that you made in your 2009 presentation as a
12 different direction than the network policy enforcement that
02:27 13 was later added in the accused products. Correct?

14 A. Could you please re-ask the question?

15 Q. It is an accurate -- it's accurate to describe
02:27 16 your -- the recommendations that you made in your 2009
17 presentation as a different direction than what Google did
18 later, which was actually adding code to the operating system
19 to enforce the background data setting.

20 A. I would say they were different approaches with similar
21 outcomes.

02:28 22 Q. As far back as Android 1.0, Google recognized that
23 applications using data in the background was a problem.
24 Correct?

25 A. I don't know that I have evidence of that.

1 Q. You certainly knew it as of 2009. Correct?

2 A. Yes, of the presentation, yes.

3 Q. And before then. Correct?

4 A. It came to light over time.

02:28

5 Q. Okay. But Android did not add the ability to enforce the
6 background data setting until Android 4.0, ice cream sandwich,
7 in late 2011. Correct?

8 A. The enforcement using a firewall, that is correct.

9 Q. There were multiple versions or updates between Android
10 1.0, 1.6, and 4.0. Correct?

11 A. Yes.

12 Q. 4.0 was not the next version after 1.6 or 1.0. Correct?

13 A. That's correct.

02:29

14 MR. FENSTER: If we can pull up JX 58.

15 Q. (BY MR. FENSTER) In fact, there were multiple versions
16 released between Android 1.0 and 4.0. Correct?

17 A. Yes, there were.

18 Q. There were multiple versions of Android released between
19 Android 1.6 and Android 4.0. Correct?

20 A. Yes.

21 Q. And even though you -- we've got now JX 58 up.

02:29

22 Based -- this is a list of all of the versions of Android that
23 were released. Correct?

24 A. Yes, it is.

25 Q. Starting with base, that's version 1.0?

1 A. That's accurate, yes.

2 Q. Okay. And donut, that's version 1.6?

3 A. That's accurate, yes.

4 Q. And ice cream sandwich, these go in order I'll represent
5 to you. This is on the second page after eclair was eclair
6 1.0, et cetera, and then ice cream sandwich is down here,
7 which is Android 4.0. Correct?

8 A. That's accurate, yes.

02:30 9 Q. And it is correct that network policy and the ability to
10 enforce the get background data setting to block background
11 data did not exist until ice cream sandwich. Correct?

12 A. That's correct.

13 Q. So even though you recognized that background data was a
14 problem way back before donut, you didn't add the ability to
15 block background data in any of these subsequent versions that
02:31 16 were released before ice cream sandwich. Correct?

17 A. That's correct.

18 Q. Now, developing network policy and those rules in the
19 accused products, that was not a small undertaking, was it?

20 A. It took effort of three engineers, yes.

21 Q. And, in fact, developing network policy manager required
22 creating thousands and thousands of lines of code. Correct?

02:31 23 A. It did, yes.

24 Q. And you estimated that it took a full person year of
25 time, of engineer time, to develop that code. Correct?

1 A. Yes.

2 Q. That means that if a single engineer worked full time on
3 a project, it would take that person a full year to develop
4 network policy manager once they started. Correct?

5 A. That's accurate, yes.

6 Q. And you didn't even start working on network policy until
7 May 2011. Correct?

02:31 8 A. That's accurate, yes.

9 Q. Thank you, Mr. Sharkey.

10 MR. FENSTER: I'll pass the witness.

11 THE COURT: Cross examination by the Defendants.

12 MR. McKEON: Yes, Your Honor. Thank you.

13 THE COURT: Mr. Fenster, you need to pull your board
14 down.

02:32 15 MR. FENSTER: Yes, Your Honor.

16 THE COURT: All right. Mr. McKeon, you may proceed
17 with cross examination in the form of a direct examination.

02:32 18 MR. McKEON: Yes. Thank you, Your Honor.

19 CROSS EXAMINATION

20 BY MR. McKEON:

21 Q. Good afternoon, Mr. Sharkey. My name is Mike McKeon, and
22 I'm counsel for Samsung. We've never met before. Isn't that
23 right?

24 A. That's correct.

25 Q. It's certainly nice to meet you. And I understand that

1 you are now newly a father. Is that right?

2 A. My second daughter, that's correct.

3 Q. Second daughter. Well, thank you for being here.

4 Now, in your discussion with Headwater's counsel, you
5 said you recently worked for Google. Isn't that right?

02:33 6 A. That's accurate, yes.

7 Q. And you left Google in September of 2024. Did I get that
8 right?

9 A. Yes, that's accurate.

10 Q. And you were previously there I guess for a total of 16
11 years.

12 A. Approaching 16 years, yes.

13 Q. And to be clear, you never worked for Samsung. Isn't
14 that right?

15 A. That is accurate. Correct.

16 Q. Can you explain how it is that you first started working
17 with Google?

02:33 18 A. Sure. As I was finishing graduate school, I participated
19 in an Android developer contest which I won that gave me
20 attention from Google engineers. They invited me to interview
21 at Google, and then I was hired.

22 Q. So you were writing Android code before you even were
23 hired by Google?

24 A. That's accurate, yes.

25 Q. And what was your primary role while you were at Google?

1 A. My primary role was working on the internals of the
2 Android operating system.

3 Q. And just generally what is the Android operating system?

4 A. The Android operating system is a set of software that
5 runs on a phone to coordinate many applications that the user
6 may be working with.

02:34 7 Q. Now, Mr. Sharkey, you're familiar with the Android
8 network policy manager. Isn't that right?

9 A. Yes, I am.

10 Q. And how are you familiar with Android network policy
11 manager?

12 A. I'm familiar with it because I'm the primary designer and
13 author of the code.

14 Q. Okay. You wrote the code.

15 A. Yes, sir.

16 Q. Okay. And what is generally the Android network policy
17 manager?

18 A. Broadly, it takes the state of apps running on the device
19 and determines if -- combines that with user preferences and
02:34 20 determines if network access should be allowed.

21 Q. And when did the initial development of the network
22 policy manager take place?

23 A. In 2011.

24 Q. Okay. And do you know how the source code for the
25 network policy manager works?

1 A. I do, yes.

2 Q. And how do you know how the policy -- network policy
3 manager works?

4 A. Because I wrote the majority of it.

5 Q. And was Samsung involved in your development of network
6 policy manager?

7 A. No, they were not.

02:35 8 Q. Now, focusing on the network policy manager, how it
9 operates today, Mr. Sharkey, how does the Android network
10 policy manager decide whether to allow or block network access
11 to applications?

12 A. It looks at -- it takes the currently running state of
13 the application, compares it to a threshold to determine if
14 it's foreground or background, combines that with user
15 preferences to then set a firewall rule for those
16 applications.

17 Q. Okay. So you mentioned a current state of the app being
02:35 18 involved with blocking or allowing network access. Which app
19 states are allowed to access network?

20 A. I would say broadly there's three categories. There
21 would be persistent apps that are always running on the
22 device. A second category would be apps that are running on
23 the top of the screen, visible to the user. And a third
24 category would be foreground services.

25 Q. Okay. With respect to the first category, the persistent

1 apps, what is an example of that?

02:36

2 A. Persistent app or a persistent process on the device
3 would be an internal system service. So, for example, there's
4 logic in Android -- there's code in Android that keeps the
5 clock accurate, that periodically reaches out to the internet,
6 a server on the internet, to synchronize the time to keep it
7 updated.

8 Q. Focusing on the second category that you mentioned, if an
9 application is shown on the display, in other words, it's in
10 the foreground of the display, does network policy manager
11 give that application network access?

12 A. Yes, it does.

02:36

13 Q. And the third category you mentioned, that foreground
14 services also get network access, what are foreground
15 services?

16 A. Foreground services are an application that's running
17 where the user expects it -- the application to complete an
18 action even if it's not in the -- even if the user has left
19 that application.

20 Q. And can you provide an example of a foreground
21 services --

02:37

22 A. Sure. One example would be if you have a phone sitting
23 idle on the table and you're not using it, if you pull out a
24 set of Bluetooth earbuds and press play on those earbuds, the
25 device would start the music app. That app would start a

1 foreground service which would give it access to the network,
2 and it could begin streaming music to the earbuds.

3 Q. Would that happen even if you didn't touch the phone at
4 all?

5 A. That's correct. You've only needed to touch the
6 Bluetooth earbuds.

7 Q. How would that affect the music streaming apps? Is that
8 an example of foreground service?

9 A. Yes, that is an example of foreground service, yes.

02:37 10 Q. And does the foreground service run even if the screen of
11 the phone is off?

12 A. Yes, they can.

13 MR. McKEON: Let's pull up JX 67, please.

14 Q. (BY MR. McKEON) And we've handed a to you. It's also in
15 your binder, Mr. Sharkey, if you want to look, but I'm going
16 to have it on the screen.

17 And do you recognize this, Mr. Sharkey?

18 A. I do, yes.

19 Q. And what is it?

20 A. This is the source code for NetworkPolicyManager.java.

02:38 21 Q. And I'm going to take you to lines 179 and 182.

22 MR. McKEON: If we could blow that up, please?

23 Q. (BY MR. McKEON) And what do you see here in this code?

24 A. This is the threshold, which is used to determine if an
25 app state is considered by network policy to be foreground or

1 background.

2 Q. And in this particular code we're seeing here, is this
3 network policy manager source code?

4 A. It is, yes.

5 Q. All right.

02:38 6 MR. McKEON: Let's take that down and pull up JX 64.

7 Q. (BY MR. McKEON) And do you recognize JX 64?

8 A. I do, yes.

9 Q. And what is this?

10 A. This is a list of constants in the Android operating
11 system describing process states, enumerating a list of states
12 a process can be in.

13 Q. And how are states assigned to applications or processes
14 when the applications are running?

15 A. So activity manager on the device looks at the -- looks
02:39 16 at all of the apps that are running and assigns a process
17 state based on the relative importance to the user.

18 MR. McKEON: Let's, if we can, go to line 28 to 54
19 of this exhibit, JX 64.

20 Q. (BY MR. McKEON) And we've highlighted that. And do you
21 see that on the screen, Mr. Sharkey?

22 A. Which lines?

23 Q. We've highlighted for our discussion 28 to 54. Do you
24 see that?

25 A. I do, yes.

02:39 1 Q. Can you explain how the threshold we looked at a minute
2 ago in the network policy manager is applied to these states?

3 A. Yes. So that threshold refers to bound foreground
4 service which has the number 5. And on Android, any process
5 state less than or equal to 5 in the network policy manager is
6 considered foreground. Any states 6 or higher is considered
7 background.

8 Q. So does network policy manager classify applications as
9 either foreground or background?

10 A. It does using the threshold.

02:40 11 Q. So let's focus on states 0 and 1 that we see here. What
12 are these?

13 A. These are examples of those persistent things that I
14 mentioned earlier, persistent parts of the operating system.

15 Q. And to be considered in state 0, 1, does network policy
16 manager take into account whether there is user interaction in
17 the display?

18 A. It does not.

19 Q. And what does state 2 refer to?

20 A. State 2 refers to an application that has an activity
21 shown on the top of the display.

02:40 22 Q. And what about state 3? What does that refer to?

23 A. State 3 refers to an application that is being depended
24 on by is someone that's on the top state.

25 Q. Now, network policy manager -- strike that.

1 To be considered states 2 and 3, does network policy
2 manager take into account whether there is user interaction in
3 the display?

4 MR. FENSTER: Objection, Your Honor. This calls for
5 opinion testimony applying claim language. The witness was
02:41 6 never designated as an expert, didn't serve any reports
7 comparing to claim language.

8 THE COURT: I'm going to sustain that.

9 MR. McKEON: Your Honor, may I have a sidebar?

10 THE COURT: You may. Approach the bench, counsel.

11 (The following was had outside the hearing of the
12 jury.)

13 MR. McKEON: Your Honor, we've been walking through
02:41 14 this expert, the code he's been describing, all the technical
15 details. This is the guy that knows. These terms I am using
16 aren't --

17 THE COURT: He has great personal knowledge, but he
18 can't just speculate.

19 MR. McKEON: I mean, I think we've established, Your
20 Honor, that he wrote this code and he knows this.

21 THE COURT: Well, if you can establish he has
22 personal knowledge on something, that's different. But the
23 question I heard was asking him to speculate about
24 something --

25 MR. McKEON: Okay.

1 THE COURT: -- without letting any foundation --

2 MR. McKEON: I'll let -- okay. Thank you.

02:42 3 MR. FENSTER: My question, just my concern going
4 forward is that --

5 THE COURT: All right. Go ahead.

6 MR. FENSTER: Just my concern going forward is that
7 he not be allowed to provide opinion testimony asking
8 questions that use claim language and comparing it to the
9 code.

10 THE COURT: Say that again?

11 MR. FENSTER: He's not been designated as an expert
02:42 12 and so he hasn't -- he can't comment -- he hasn't looked
13 at -- can't compare the claim language to the code. And I was
14 concerned about with the last question, besides speculation,
15 is that it calls for opinion testimony, comparing the code to
16 claim language, because Mr. McKeon's question was using claim
17 language without interacting in the device display foreground.

18 THE COURT: Let me be clear, counsel. This is not
19 an expert witness. It is a fact witness with a recognized
02:43 20 high level of personal knowledge in this particular area. And
21 so I intend him to be examined as a fact witness and not an
22 expert. And he's not here to opine about application of
23 product details to the claims at issue or anything like that.
24 He can certainly talk about the products that he designed and
25 had -- has personal knowledge of.

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1 MR. McKEON: On that, Your Honor, the language we're
2 dealing with is plain and ordinary meaning language. There's
02:43 3 an instruction on it. I'm using language that's used by the
4 engineers. So this is not -- I'm not going outside his
5 personal knowledge.

6 THE COURT: As long as we're talking about what he
7 has personal knowledge of with regard to the code, we
8 shouldn't be getting too much claim language into those
9 questions anyway.

10 MR. McKEON: All right. Let me take a shot at it.

11 THE COURT: All right. Let's go forward.

12 (The following was had in the presence and hearing
13 of the jury.)

14 THE COURT: Let's proceed.

15 MR. McKEON: Thank you, Your Honor.

02:44 16 Q. (BY MR. McKEON) Now, Mr. Sharkey, with respect to
17 the -- you testified you wrote the network policy manager,
18 you're involved in preparing that code. Do you recall that?

19 A. Yes.

20 Q. And in your own personal knowledge, do you know how that
21 code works within an Android device?

22 A. Yes, I do.

23 Q. Okay. So with that, to be considered states 2 and 3,
24 does network policy manager take into account whether there's
25 an interaction in the display?

1 A. It does not.

02:45 2 Q. And what do states 4 and 5 refer to?

3 A. They refer to the foreground services that we discussed
4 earlier.

5 Q. And to be considered states 4 and 5, does network policy
6 manager take into account whether there is user interaction in
7 the display?

8 A. It does not.

9 Q. Now, let's talk about a music player app. What is the
02:45 10 state of the music player when the app is playing music but
11 not on the top screen?

12 A. It's likely a foreground service.

13 Q. Okay. And in the earbud example where you play music by
14 tapping your earbud, what is the state of the music player in
15 that scenario?

16 A. It's likely a foreground service.

17 Q. And can application change between states?

18 A. Yes, they regularly do.

02:45 19 Q. Now, you were asked a question by counsel in his
20 examination, and you indicated something at a high level a
21 foreground app is something that user is actively aware of
22 operating and they're interacting with the device. Do you
23 recall some testimony in that regard?

24 A. Yes, I do.

25 Q. Could you explain what you mean by that?

1 A. That those are two examples of how apps can be running in
2 the foreground.

02:46

3 Q. Okay. And when you say two examples -- well, strike
4 that.

5 When a user is -- has a phone and running the Android and
6 they're operating on the top screen and they're running
7 through the music app or whatever app they're working on, I
8 mean at that point they're interacting in the top screen. Is
9 that fair to say?

10 A. That's accurate, yes.

02:46

11 Q. Okay. But does that have anything to do with the
12 classification of the states that we talked about?

13 A. By virtue of it being an app in the foreground of the
14 display, it's in the top state.

15 Q. Okay. And that's what the network policy manager looks
16 to. Isn't that right?

17 A. Yes.

18 Q. Now, could you have written network policy manager to
19 make decisions based on interaction in the display foreground?

02:47

20 A. Yes, we could have.

21 Q. And why didn't you do that?

22 A. Because it would have resulted in a poor user experience.

23 Q. And why do you say that?

24 A. So the example of that music player app, if the screen
25 turns off, the user still expects their music to continue

1 playing.

2 THE COURT: Mr. Sharkey, pull the microphone a
3 little closer to you.

4 THE WITNESS: Sure.

5 THE COURT: I want to make sure everyone hears you.

6 THE WITNESS: Thank you, Your Honor.

7 THE COURT: Go ahead, counsel.

02:47 8 MR. McKEON: Thank you, Your Honor.

9 Q. (BY MR. McKEON) I want to pull up a slide that was used
10 earlier in this trial, Mr. Sharkey.

11 MR. McKEON: If I can get PDK 1.25. And just focus
12 on the right here.

13 Q. (BY MR. McKEON) And I believe on your examination with
14 counsel, you saw a slide like this. Do you recall that?
15 Maybe not.

02:48 16 Let me just ask you this question. This is a slide that
17 was presented earlier in this trial, sir, and it was purported
18 to reflect the Android operating system. And I want to ask
19 you a question about that.

20 Do you see within the network policy there's a
21 classification of applications that's interacting in the
22 foreground or not on this diagram?

23 A. I see that part of the diagram, yes.

24 Q. Is that how the Google network policy works?

25 A. No, it does not.

1 Q. Why do you say that?

02:48 2 A. Because this appears to use interacting as the key
3 difference between the two states.

4 Q. And can you remind us how it is you understand the
5 technical operation of the Google Android network policy?

6 A. Can you repeat the question?

7 Q. Well, you just gave an answer regarding -- you said this
8 is not the way it works. How do you know that?

9 A. I know that because I wrote the code.

10 MR. McKEON: And can we pull up, if we can,
02:49 11 please--pull that down--PDX 3.53. And just highlight the text
12 that -- the content of the slide here. Yeah.

13 Q. (BY MR. McKEON) This was presented earlier in this
14 trial, Mr. Sharkey. And if you see at the top here, there is
15 lines 811 to 813. Do you see that?

16 A. I do, yes.

17 Q. What is the purpose of putting comments in source code?

02:49 18 A. It's a reference for future developers in the area to
19 help understand what the code is doing.

20 Q. Okay. Now, if someone earlier in this trial told the
21 jury that a Google engineer like yourself wrote this comment
22 at 811 to 813 and where it says foreground, if someone told
23 the jury that was shorthand for interacting in the device
02:50 24 display foreground with the user, the Google engineer was just
25 doing shorthand, would you agree with that?

1 MR. FENSTER: Objection, Your Honor. It calls for
2 speculation, improper expert testimony.

3 MR. McKEON: Your Honor, I can rephrase it.

4 THE COURT: I think you should rephrase it. Ask him
5 what he considers it to mean.

6 MR. McKEON: Thank you, Your Honor.

7 Q. (BY MR. McKEON) Based upon your experience, based on
8 your experience, based on your experience, if at Goggle
02:50 9 someone wrote the language we see here which is returns true
10 if it is considered foreground and as such will be allowed to
11 access network when the device is idle or in battery saver,
12 based on your experience, would you interpret that to really
13 mean -- this is just shorthand to really mean interacting in
14 the device display foreground with the user?

15 MR. FENSTER: Same objection, Your Honor.

02:51 16 THE COURT: Overruled.

17 THE WITNESS: In comments like this would be taken
18 in the context of the file they're within. This is inside the
19 network policy manager. So this would describe what network
20 policies version of foreground versus background means.

21 Q. (BY MR. McKEON) So would that be an accurate reflection
22 of when it says foreground as being shorthand for interacting
23 in the device display foreground with the user?

24 A. No, that's not accurate. It would not be -- there's no
25 reference to interacting in the foreground.

02:51 1 Q. Thank you, Mr. Sharkey.

2 MR. McKEON: You can pull that down.

3 Q. (BY MR. McKEON) Now, we just talked about Google network
4 policy and how that works today. When did Google first come
5 up with a policy to prevent network access for apps based on
6 foreground versus background?

7 A. I would say we started giving developers guidance in that
8 area in 2009.

9 Q. And what was the name of that -- was there a particular
02:52 10 application or -- or code that -- that did that?

11 A. Yes. It was the API I mentioned earlier, the get
12 background data setting API.

13 Q. And what was the purpose of the get background data
14 setting?

15 A. It was to communicate to developers the user intention if
16 the user intended background data to proceed or to not be
17 allowed.

18 Q. How are you familiar with the get background data
19 setting?

20 A. Because I was an engineer at Google at the time and I
21 gave a presentation about it.

22 Q. And when was the background data setting first added to
23 Android?

02:52 24 A. It was added in Android 1.5 also known as cupcake.

25 Q. Was the background -- the get background data setting

1 also present in Android version 1.6, what we call donut?

2 A. Yes, it is.

3 Q. I should say what Google calls donut. Isn't that right?

4 A. That's accurate, yes.

5 Q. And do you recall when donut Android 1.6 was released?

6 A. In 2009.

7 Q. Was the background data setting a feature specific to
02:53 8 certain devices or would it have been present on all mobile
9 devices using Android 1.6?

10 A. It would have been present on all mobile devices.

11 Q. How would an application have used the background get
12 background data setting?

13 A. An application before --

14 MR. FENSTER: Objection, Your Honor, calls for
15 speculation.

16 THE COURT: I think that crosses the line.
17 Sustained. You can ask this witness about what he has
18 personal knowledge of.

19 MR. McKEON: Okay.

20 THE COURT: He's a fact witness.

21 MR. McKEON: Okay.

02:53 22 THE COURT: You can't ask him to speculate or give
23 opinions.

24 MR. McKEON: Let me reword it, Your Honor.

25 Q. (BY MR. McKEON) Do you have an understanding of how an

1 application would have used the background data setting in
2 1.6?

3 A. I'm aware of two applications and more that have used
4 that API.

5 Q. Okay. And with that understanding, did Android have the
6 ability to classify applications as foreground or background?

7 A. Android had that capability, yes.

02:54 8 Q. Okay. How did Android version 1.6 classify applications
9 based on whether they are running in the foreground or
10 background?

11 A. There was code in activity manager that kept track of the
12 things were in the foreground or background.

13 Q. Was the code for activity manager and the code for
14 developers to check the background data setting available to
15 the public back in this time frame?

16 A. Yes, it was.

02:54 17 Q. And does that refer to the term open source? Is that
18 what it means, to be available to the public?

19 A. Yes, that's synonymous.

20 Q. Does the Android operating system still to this day use
21 activity manager to classify applications or processes as
22 foreground or background?

23 A. It does, yes.

24 Q. Now, we've already seen your presentation and it's been
25 discussed in this trial so I want to talk to you about that

1 now.

02:55

2 MR. McKEON: So let's pull up, if we can, please,
3 DTX 216.

4 Q. (BY MR. McKEON) And you recognize this as your
5 presentation. Is that right, Mr. Sharkey?

6 A. I do, yes.

7 Q. And, of course, that's your name on the front cover.
8 Isn't that right?

9 A. That's accurate.

10 Q. And what was the general subject matter of the
11 presentation?

12 A. It was giving advice to developers about best practices
13 to help preserve battery life on devices.

14 Q. Okay. And why did you -- why did you give this
15 presentation?

02:55

16 A. Because there was a lot of developer interest in what
17 best practices were at the time.

18 Q. And where was the presentation given?

19 A. It was given at Musconi Center in San Francisco,
20 California.

21 Q. And who was the audience in the presentation?

22 A. The audience was primarily third-party Android app
23 developers.

24 Q. And do you recall about how many people were there?

25 A. There was over a hundred, so many that I had to turn

1 people away. The room was full.

2 Q. Okay.

3 MR. McKEON: And if we can go to slide 2.19. I'm
4 sorry. 216.9.

02:56 5 Q. (BY MR. McKEON) Now, looking at this slide, can you tell
6 us what is being explained here in your presentation?

7 A. Sure. So we're explaining to a developer writing code in
8 their application, how to call the get background data setting
9 API on the device to determine if a specific network request
10 should go forward or if it should be stopped.

11 Q. Okay. And I see that, the cupcake on the right. Is that
12 to signify this is new in cupcake?

13 A. That's accurate, yes.

14 Q. And that highlighting there, that was done by you. That
02:56 15 wasn't done by us in trial.

16 A. I highlighted that in green for the conference, yes.

17 THE COURT: Be sure you speak one at a time,
18 gentlemen.

19 MR. McKEON: Thank you, Your Honor.

20 Q. (BY MR. McKEON) Mr. Sharkey, was your 2009 presentation
21 captured on video and made available on YouTube?

22 A. Yes, it was.

23 MR. McKEON: Let's pull up -- take a look at that.
24 We'll pull up DTX 495 and start it at time stamp 19:50.

25 Q. (BY MR. McKEON) And, of course, that's you. Isn't that

02:57 1 right, Mr. Sharkey?

2 A. That's accurate, yes.

3 Q. A younger version, but it's you.

4 A. Yes.

5 Q. And I want to play now for the members of the jury a
6 portion of this video.

7 MR. McKEON: So with that, can we play the clip?

02:57 8 And for the record we're playing 19:50 to 20:45.

9 (Whereupon, the identified video was played in open
02:58 10 court.)

11 Q. (BY MR. McKEON) Okay. Now, just more simply, what were
12 you explaining to developers in that room in this
13 presentation, that clip we just heard?

14 A. I was explaining to developers that there was a setting
15 that the user could go into on their device to change
16 the -- to express the background data setting preference, how
17 they would change it, and then how a developer might
18 see -- find that information to make decisions in their own
19 app.

02:59 20 Q. And in the video, you mentioned all of the Google
21 services that are on the device, look at whether the box for
22 the background data setting is checked. What did you mean by
23 that?

24 MR. FENSTER: Objection, Your Honor. May we
25 approach on this one?

1 THE COURT: Approach the bench.

2 (The following was had outside the hearing of the
3 jury.)

4 THE COURT: What's the objection?

5 MR. FENSTER: The objection is that this is
02:59 6 uncorroborated testimony regarding closed source non-public
7 source code. He's -- Mr. McKeon is asking him about
8 first-party apps, not the Android software.

9 First-party apps were closed source non-public, and no
10 code has ever been produced in this case, no expert has ever
11 looked at any code, no documents have ever been produced in
12 this code. And the only evidence of how those first-party
13 apps worked is what Mr. Sharkey is about to say right now, and
14 there's no corroboration of that.

03:00 15 And so he can -- there's no ability to corroborate that,
16 and that's improper prior art.

17 THE COURT: What's your response?

18 MR. McKEON: Your Honor, we're just -- first of all,
19 it's a pre-admitted exhibit, number one. And number two, I am
20 just asking him to confirm what he was telling the audience,
21 the facts, you know, putting on a little more color on it.
22 That's all I'm doing here.

23 MR. FENSTER: I think what he's going to ask him to
24 do is that the first-party apps did in fact use code that used
03:00 25 get background data setting and were programmed in a specific

1 way, and there's no corroboration for that.

2 THE COURT: This is a pre-admitted exhibit. The
3 question as I appreciated it was simply to have the witness
4 explain what he meant by the statement within that
5 pre-admitted exhibit.

6 MR. McKEON: That's right.

7 THE COURT: The things you are talking about, Mr.
8 Fenster, may well be true, but they seem more like cross
9 examination than they do to excluding this. You can certainly
10 cross him on the fact that this is not public, you know, none
03:01 11 of it's been produced, you didn't have a chance to see it.
12 You can certainly make those same issues raised during cross
13 examination of him.

14 But given that it's a pre-admitted exhibit, given that
15 the question is simply what did you mean when you said X, I
16 don't see anything objectionable to that.

17 MR. FENSTER: Thank you, Your Honor.

18 THE COURT: I'm going to overrule your objection.

19 MR. McKEON: Thank you, Your Honor.

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

22 THE COURT: All right. Let's continue.

03:02 23 Q. (BY MR. McKEON) So going back, let me re-ask. Okay, Mr.
24 Sharkey? You mentioned that all of the Google services that
25 are on the device, look at whether the box for the background

1 data setting is checked. What did you mean by that?

2 A. I meant that Google services like Gmail and calendar on
3 the device, when the user has unchecked the box, those apps
4 would stop using data in the background.

03:02 5 Q. So when a Google app like Gmail and calendar was running
6 on the device and the user changes the setting to block
7 background data, would the device follow the setting to
8 disallow background data?

9 MR. FENSTER: Objection, Your Honor. This is
10 beyond -- lack of foundation and lack of corroboration for
11 closed source functionality.

12 THE COURT: Overruled.

13 THE WITNESS: Could you repeat the question?

03:02 14 Q. (BY MR. McKEON) Yes, let me repeat that. When a Google
15 app like Gmail or calendar was running on the device and the
16 user changes the setting to block background data, would the
17 device follow the setting to disallow background data?

18 A. Yes, it would.

19 Q. Was the Android background data setting a policy that
20 Google told its third-party application developers to follow?

21 A. It was guidance we gave them, yes.

22 Q. And do you know if there are third-party application
23 developers that followed the policy?

03:03 24 A. I do. I'm aware of several.

25 Q. Now, why was the network policy manager later developed

1 if Android already had the background data setting in 2009?

2 A. I would say it was an extension of that initial feature.
3 We expanded it to give the user controls over individual
4 applications instead of having a single check box that would
5 apply device-wide.

03:03

6 I would say additionally it was a belt-and-suspenders
7 check. So if you think of the get background data setting as
8 a belt that would keep your pants up, we also added the
9 firewall as a set of suspenders that would ensure if there
10 were bugs in applications, that they would be caught and
11 prevented from using data in the background.

12 Q. Okay. Now, Mr. Sharkey, Headwater's counsel asked about
13 the connectivity manager API. Do you recall that?

14 A. I do, yes.

15 Q. Did connectivity manager exist in the Android 1.6 donut
16 version?

03:04

17 A. It did, yes.

18 MR. McKEON: Your Honor, may I have a moment?

19 THE COURT: You may take a moment.

20 (Pause in proceedings.)

21 Q. (BY MR. McKEON) And one more question. Headwater's
22 counsel asked you about activity manager. Do you recall that?

23 A. I do, yes.

24 Q. Did the activity manager exist in the Android 1.6 donut
25 version?

1 A. It did, yes.

2 Q. Thank you, Mr. Sharkey.

03:05 3 MR. McKEON: Your Honor, I pass the witness.

4 THE COURT: All right. Is there redirect?

5 MR. FENSTER: Yes, Your Honor.

6 THE COURT: Okay.

03:05 7 All right. Let's proceed with redirect examination.

8 REDIRECT EXAMINATION

9 BY MR. FENSTER:

10 Q. First of all, Mr. Sharkey, you still stand by all the
11 testimony that you gave during my questioning earlier. Is
12 that correct?

13 A. I do, yes.

14 Q. And you stand by all of the deposition -- all of the
15 testimony that you gave in your deposition. Is that fair?

16 A. I do, yes.

17 Q. You stand by your deposition -- by your testimony that
18 Android 1.6 did not have any ability to enforce the background
19 data user preference. Correct?

03:05 20 A. No ability to enforce. That's correct.

21 Q. You stand by your testimony that Android 1.6 did not use
22 a threshold to classify apps as foreground or background.
23 Correct?

24 A. Correct.

25 Q. You stand by your testimony that Android 1.6 did not have

1 the ability to use an API to tell the app in the background
2 that a connection was not available when it, in fact, was.
3 Correct?

4 A. That's correct.

03:06 5 Q. Now, counsel asked you some questions about whether Gmail
6 or other first-party apps might respect -- voluntarily respect
7 the background data setting. Correct?

8 A. He asked questions about that, yes.

9 Q. Okay. Now, you presented -- first of all, the source
03:06 10 code for background -- for Gmail is closed source, it's
11 non-public. Correct?

12 A. That's accurate, yes.

13 Q. And it was not public before May 2010. Correct?

14 A. That's correct.

15 Q. So it was not public prior art. Correct?

16 A. Gmail was not available in the public. That's correct.

17 Q. And that's true of contacts and calendar as well.
18 Correct?

19 A. I believe contacts provided some portions of contacts and
20 calendar may have been available as -- as open source.

03:07 21 Q. You don't know?

22 A. I don't recall the exact dates.

23 Q. Okay. What we do know is you certainly didn't present or
24 show the jury and Samsung has not produced any source code for
25 any of those first-party apps. Correct?

1 A. That's my understanding. Correct.

2 Q. And Samsung didn't ask you or didn't show you any
3 documents, any technical documents or developer documents or
4 anything else describing those first-party apps. Fair?

5 A. They showed my presentation in 2009.

03:07 6 Q. That's it. Right?

7 A. Correct.

8 Q. Okay. And you mentioned two third-party apps? You said
9 you might have been aware of two third-party apps. You've
10 presented no evidence in connection with those. Correct?

11 A. That's correct.

03:08 12 Q. Now, I just wanted to clarify. You mentioned something
13 about sync manager and sync manager in Android. No part of
14 Android 1.6 sync manager or otherwise used a threshold to
15 classify apps as foreground or background. Correct?

16 A. It did not use a threshold. That's correct.

17 Q. And nothing in Android 1.6 had the ability to have an API
03:08 18 tell the background app that it was not -- that the network
19 was not available. Correct?

20 A. That the network is not available, that's correct.

21 Q. Okay. Okay. Let's --

22 MR. FENSTER: If we can pull up PTX 212 and go to
03:09 23 212, page 4.

24 Q. (BY MR. FENSTER) So counsel was asking you about whether
25 there are apps that are classified as top and, therefore,

1 foreground are interacting in the display. Do you recall
2 that?

3 A. Yes, I recall that.

4 Q. Okay.

5 MR. FENSTER: If you could, Mr. Mahon, if you can go
6 to the highlighted version that we did before. Thank you.

03:10 7 Q. (BY MR. FENSTER) And if we can look at another, this
8 first bullet point that says if an activity is in the
9 foreground of the screen. Do you see that?

10 A. I do.

11 Q. And the screen, that's the device. Right?

12 A. Yes, it is.

13 Q. And when -- and then it goes on to say this is usually
14 the activity that the user is currently interacting with.
15 Correct?

16 A. I see that, yes.

17 Q. The user is currently interacting with this activities
03:10 18 that in the screen or the device. Correct?

19 A. That's one example of an activity.

20 Q. Okay. And all foreground apps that have the process
21 state type, they will have something called a UI, a user
22 interface. Correct?

23 A. Yes.

24 Q. And that user interface is the interface by which the
25 user interacts with that app on the screen. Correct?

1 A. They can interact with it, yes.

03:10 2 Q. Okay. And this document was written before -- long
3 before this lawsuit. Correct?

4 A. I don't know. It looks like the date is 2024 at the top
5 of the screen.

6 Q. I'll represent to you that's the date that it was
7 printed. You know that this activity document existed on the
8 developer app website long before. Correct?

9 A. The document did exist, but it's likely evolved a lot
10 over the years.

03:11 11 Q. Okay.

12 MR. FENSTER: And if we can pull up 215. And if you
13 can go to that foreground process on page 215.1. There you
14 go.

15 Q. (BY MR. FENSTER) And a foreground process is one that is
16 required for what the user is currently doing. Correct?

17 A. I see that, yes.

18 Q. And it's running at the top of the screen that the user
19 is interacting with. Correct?

03:11 20 A. I see that.

21 Q. That's interacting with the device on the display.
22 Correct?

23 A. That's one example, yes.

24 Q. Okay. Now, you were asked about foreground service. Do
25 you recall that?

1 A. I was, yes.

2 Q. Okay.

3 MR. FENSTER: Now, if we can go to 215-2.

4 Q. (BY MR. FENSTER) It describes a visible process. Right?

5 A. It does, yes.

03:12 6 Q. Okay. And the app developer documents that existed
7 before describe a visible process as one that is doing work
8 that the user is currently aware of so killing it has a
9 noticeable negative impact on the user experience, and it goes
10 on that a process is considered visible in the following
11 conditions. Correct?

12 A. I see this documentation, yes.

13 Q. Okay. And the second bullet point states, it has a
14 service that is running as a foreground service.

15 A. I see that, yes.

03:12 16 Q. So that's, for example, the music service that is
17 actively presenting music to the user. Correct?

18 A. Could you please re-ask the question?

19 Q. Sure. A foreground service -- an example of a foreground
20 service is a music service that is actively presenting music
21 to the user. Correct?

22 A. Yes, it is.

03:13 23 Q. And Android treats the service as something that the user
24 is aware of or essentially as if it were visible. Correct?

25 A. That's what's on the screen, yes.

1 Q. Okay. So Android is classifying the foreground service
2 as visible. Correct?

3 A. Yes, it is.

4 Q. And based on that classification, it allows internet
5 activity. Correct?

6 A. Network policy does, yes.

03:14

7 Q. And because it's classified as visible and foreground,
8 the API indicates that the network is available. Correct?

9 A. Yes. Network policy does.

10 Q. Now, both of these documents are documents that have
11 existed on Android's developer website. Correct?

12 A. They exist there as of the date I see.

13 Q. And they're Google-authored documents. Correct?

14 A. They are, yes.

03:14

15 Q. And they are Google documents -- they're documents that
16 were authored by Google before Google's good partner Samsung
17 was sued in this case and asked for help defending it.
18 Correct?

19 A. I don't know the date that these were first written.

20 Q. Those documents were prepared without multiple meetings
21 like you had with attorneys to prepare for your testimony in
22 this case. Fair?

23 A. They were prepared without lawyers. That's correct.

24 Q. Now, you are not a designated expert in this case. Is
25 that correct?

1 A. That's my understanding.

2 Q. You have not been asked to look at the patent or compare
03:14 3 the patent -- the claim to either the accused products or the
4 prior art. Correct?

5 A. I have not been asked to do that.

6 Q. And you have rendered no opinions and have no opinions
7 as -- on those subjects. Correct?

8 A. That's correct.

03:15 9 Q. Foreground apps include apps that have a process state at
10 top. Correct?

11 A. Yes.

12 Q. And every top -- every app that has a process state of
13 type -- of top has a user interface for the user to interact
14 on the screen. Correct?

15 A. That the user can interact with, yes.

16 Q. All right. Thank you very much.

17 MR. FENSTER: Pass the witness, Your Honor.

18 THE COURT: All right. Is there additional cross?

19 MR. McKEON: Yes, Your Honor, briefly.

03:15 20 THE COURT: All right. Proceed with additional
21 cross examination.

22 RECROSS EXAMINATION

23 BY MR. McKEON:

24 Q. Just a few questions, Mr. Sharkey. You were asked a
25 question about something being visible on the screen. You

1 recall that?

2 A. I do.

3 Q. Is a classification setting that something is visible on
4 the screen the same as classifying that there is interaction
5 on the screen?

03:16 6 MR. FENSTER: Objection, Your Honor, calls for
7 opinion testimony.

8 MR. McKEON: Your Honor, I'm on redirect here.

9 THE COURT: I know it's redirect, but it does seem
10 to call for an opinion. I am going to sustain the objection.

11 MR. McKEON: Thank you, Your Honor.

12 Q. (BY MR. McKEON) Headwater's counsel asked you whether
13 there was anything within Android 1.6 operating system to
14 enforce the background data setting. Do you recall that?

15 A. I do.

03:16 16 Q. Did the Gmail application enforce the background data
17 setting if that was the user's preference as set in the
18 background setting?

19 A. The sync.

20 MR. FENSTER: Objection, Your Honor. Lack of
21 personal knowledge, no corroboration regarding the inner
22 workings of Gmail.

23 THE COURT: If the witness has personal knowledge of
24 the question asked, he can answer the question.

25 THE WITNESS: I do. Can you repeat the question?

1 Q. (BY MR. McKEON) Yes. Did the Gmail application enforce
03:17 2 the background data setting if that was the user's preference
3 as set in background data setting?

4 MR. FENSTER: Objection, Your Honor. May I
5 approach? I apologize.

6 THE COURT: Approach the bench, counsel.

03:17 7 (The following was had outside the hearing of the
03:17 8 jury.)

9 MR. FENSTER: Your Honor, there's no --

10 THE COURT: Just a minute. I've got so many reports
11 back here it takes me a while to get up here.

12 MR. FENSTER: I apologize.

03:17 13 There is no -- they produced zero evidence about what
14 happens in Gmail. The only thing that was produced in
15 discovery was a statement by Mr. Sharkey in his deposition
16 that it follows best practices. Now they're going beyond
17 that, never produced in discovery saying that it enforces it.

18 We don't know if it defers it, if it blocks it; we have
19 no evidence of that because there is no code, but it was never
20 produced in this case. Mr. Sharkey never provided this
03:18 21 testimony before; he only testified that it followed best
22 practices. That's the full extent of what he said on the
23 subject in the past. And so this is a gross surprise that we
24 have no ability to --

25 THE COURT: Why are we talking about Gmail here?

1 MR. McKEON: It is -- it's an application; it's an
2 app that Google developed, and so we're just giving -- a
3 first-party app that Google developed and how it works with
4 these settings. That's all we're doing. This has been in the
5 case, Your Honor, the whole time. This is not new at all.
6 None of this is new.

03:18

7 THE COURT: What's your response to Mr. Fenster's
8 objection or argument that he's not seen or gotten any
9 information on this and this is all --

10 MR. McKEON: Well, this is the first time I'm
11 hearing that they asked for Gmail -- for us to produce the
12 Gmail code. I don't --

13 THE COURT: We're not going to go back into what the
14 discovery process was and where it got off the track, if it
15 did. We're not going there.

03:19

16 MR. McKEON: Well, this is the first time I'm
17 hearing, Your Honor, there is a problem with it; that all of
18 the sudden it's a big issue. It's a simple question regarding
19 an app that he knows about. He is a Google engineer --

20 MR. FENSTER: Your Honor --

21 MR. McKEON: -- and how it arrived with the stuff he
22 wrote. That's all I'm asking.

23 MR. FENSTER: Your Honor, this was never produced in
24 discovery. It's not in Mr. Schonfeld's report. Mr. Schonfeld
25 is the validity guy. He's relying on this. He's relying on

1 Gmail. The only thing he has in his report is the statement
2 by Mr. Sharkey from his deposition that it follows best
3 practices; that's it. And it shouldn't be able to go beyond
4 that, because now they're supplementing something that's not
03:19 5 in Schonfeld's report and was never produced in discovery.

6 THE COURT: What's the probative value of this --

7 MR. McKEON: Based on the examination of
8 Mr. Fenster, he is making this distinction between, you know,
9 enforcement versus something else, and I'm just fleshing out
10 exactly how it worked with the first party app. It's all I'm
11 saying, which I think, you know, he went into that.

12 MR. FENSTER: This is their primary invalidity
03:20 13 report. This is their primary invalidity basis that
14 Mr. Schonfeld put in his lengthy report, and that statement
15 that they're eliciting now is not in it.

16 THE COURT: I can be clear with both of you on this.
17 Whatever Mr. Sharkey says today on the witness stand is not
18 somehow going to supplement Dr. Schonfeld's report. He's not
19 going to be told, Mr. Sharkey said this; what do you think
20 about that, and then go beyond what's already in the report.
21 That's not going to happen when he testifies.

22 MR. McKEON: Understood.

03:21 23 MR. FENSTER: But it's still objectionable for the
24 reasons we have no ability to cross examine on this. It's
25 coming up in redirect, and it's never been produced before.

1 He's never said it in deposition. He was subjected to a
2 lengthy deposition by both parties and he's never said this
3 before. It's not -- this is not something that's stated in
4 that video. It's not something that's stated in any exhibit
5 that's been produced in this case, Your Honor.

6 THE COURT: So tell me again your response to this
7 argument that you're effectively ambushing him, Mr. McKeon.

03:21 8 MR. McKEON: All I'm saying, Your Honor, this is
9 squarely in the case. We've been dealing with Gmail
10 first-party apps. We've been talking about this throughout
11 this case. He's complaining now that we didn't produce the
12 Gmail code, but this is the first I'm hearing of that. If
13 that was a problem, we should have heard about.

14 I'm just asking a simple question of how the Gmail app
15 interacts with the data setting, the background data setting.
16 That's all I'm asking.

17 MR. FENSTER: If he asks does it follow best
18 practices, I'm fine with that; beyond that, it's an ambush,
03:22 19 Your Honor.

20 THE COURT: I'm going to limit you to asking whether
21 it follows best practices and then we are going to move onto
22 something else.

23 MR. FENSTER: Thank you, Your Honor.

24 (The following was had in the presence and hearing
25 of the jury.)

03:22

1 Q. (BY MR. McKEON) Okay, Mr. Sharkey. I'm going to -- did
2 the Gmail application -- when it was working with the
3 background data setting, did the Gmail application follow best
4 practices with respect to the setting that was checked by the
5 user?

6 A. Through the help of sync manager in the platform, which
7 is part of the open source operating system, it did.

8 Q. Okay. And if an application used connectivity manager to
9 check the status of that setting, would the connectivity
10 manager API indicate to the application whether the setting
11 was set to disable background data?

03:22

12 A. Yes, it would.

13 Q. Okay. Thank you, Mr. Sharkey.

14 MR. McKEON: Your Honor, pass the witness.

15 THE COURT: All right. Anything further from the
16 Plaintiff, Mr. Fenster, for this witness?

17 MR. FENSTER: No, Your Honor.

18 THE COURT: Then you may step down, Mr. Sharkey.

19 THE WITNESS: Thank you, Your Honor.

20 THE COURT: Counsel, is there any reason Mr. Sharkey
21 should not be excused?

22 MR. McKEON: Not from Samsung, Your Honor.

23 MR. FENSTER: No objection, Your Honor.

24 THE COURT: Then you're also excused, Mr. Sharkey,
25 which basically means you're free to stay with us if you

03:23 1 choose; you're free to leave.

2 THE WITNESS: Thank you, Your Honor.

3 THE COURT: All right. Plaintiff, call your next
4 witness.

5 MS. FAIR: Your Honor, the Plaintiff calls by video
6 deposition Mr. James Lavine. Mr. Lavine does work as an
7 engineering consultant for Headwater and is a co-inventor with
8 Dr. Raleigh on the '976 Patent. Mr. Lavine also worked at

03:23 9 ItsOn and was a part of the relationship with Sprint and
10 Samsung. This deposition clip is 12 minutes and 32 seconds,
11 of which 6 minutes and 6 seconds is Headwater designations and
12 6 minutes and 26 seconds are Samsung designations.

13 THE COURT: All right. Proceed with this witness by
14 deposition.

15 JAMES LAVINE

16 BY VIDEO DEPOSITION

17 Q. Good morning, Mr. Lavine.

18 A. Good morning.

03:24 19 Q. You were previously an employee of a company called
20 ItsOn. Is that correct?

21 A. That is correct.

22 Q. And you worked there from approximately December of 2009
23 to January 2018. Is that roughly accurate?

24 A. Correct. We closed -- actually the company folded in
25 December of 2017.

1 Q. Okay. And during your time there, you were involved in
2 engineering and solutions architecture?

03:24

3 A. Yes.

4 Q. You're represented by the law firm of Russ August. Is
5 that correct?

6 A. Yes.

7 Q. Are you paying for the Russ August firm to represent you?

8 A. No, I am not.

9 Q. And you understand that Russ August is also the counsel
10 representing Headwater in this case?

11 A. Yes, I am aware.

03:25

12 Q. So Headwater's counsel is representing you for free. Is
13 that fair?

14 A. From -- my understanding is that I am not paying for it.

15 Q. You understand that Headwater is asserting a number of
16 patents in this case against Samsung?

17 A. Yes. At least one, yes.

18 Q. You're a named inventor on a number of Headwater patents.
19 Is that correct?

20 A. That is correct.

03:25

21 Q. So do you have any understanding as to the specific
22 details of the patents that are being asserted in this case?

23 A. Not to the specific details. Not off the top of my head,
24 no.

25 Q. Okay. Did that agreement identify specific patents?

1 A. I do not know.

2 Q. Do you have any reason to believe sitting here today that
3 that agreement would have identified specific Headwater
4 patents?

03:26 5 A. I don't know. I didn't draft the agreement.

6 Q. Do you know whether at the time that agreement was signed
7 the patents that are assisted in this case even existed?

8 A. I don't know.

9 Q. Generally speaking, what was the purpose of that feature?

10 A. Sprint wanted a solution that would allow them to reduce
11 roaming traffic because Sprint at the time roamed on Verizon
03:26 12 and a bunch of RCC networks, and they had to pay for that
13 usage, yet they're offering unlimited services -- unlimited
14 data to their customers. So what they wanted to do was reduce
15 the financial impact of the data -- what they deemed as data
16 that was non-essential to -- for the user while they were
17 roaming on those networks.

18 Q. And did that specific feature distinguish between
19 background and foreground applications?

03:27 20 A. There was a policy that you could set that would classify
21 traffic as background or foreground traffic, as well as -- as
22 well as tie it to a potential application.

23 Q. Do you know what functionality Android's currently using
24 to make foreground/background determinations?

25 A. Not today, no.

1 Q. Is it your understanding that the asserted patents in
2 this case relate to features developed for ItsOn software
3 under license for Headwater?

03:27

4 A. Yes.

5 Q. Could ItsOn's software operate without using Google's
6 source code?

7 A. No. Well, no. Let me rephrase that. Let me rephrase
8 that.

03:28

9 Most likely, no. But remember, AOSP is just -- is the
10 open source project. The OEMs take that version and do what
11 they want. And so AOSP is one way to integrate ItsOn source
12 code, but you could also integrate it with OEM source code.

13 Q. Google's Android source code predates ItsOn and
14 Headwater. Correct?

15 A. To the best of my understanding, yes.

16 Q. Can you describe for me any differences between the
17 Headwater patents at issue in this case and functionality that
18 was available in Google's operating system prior to your
19 inventions?

03:28

20 A. The major difference was that ItsOn had specific policy
21 that the operators could write and download to define what
22 they meant by foreground and background and which applications
23 it applied to and which ones it didn't, or which destinations
24 it applied to and which ones it didn't. This is a glob --
25 this flag here, for example, it's just a setting for the

1 application. Whether or not the application actually respects
2 it up is up to the application. Where what ItsOn was doing
03:29 3 was something that was a centralized policy enforcement on the
4 device that guaranteed that, based on policy, we would
5 implement that policy and either allow that usage or not.
6 Right? This is just -- this here is just a setting that says,
7 Hey, I'm making this available to you. You should look at
8 this and you should respect it.

9 But if in the end I have an old version of an
10 application, then before this flag was created, then A, it
03:29 11 wouldn't respect it because it didn't know about it, and B,
12 you're still leaving -- you're leaving this decision up to the
13 application developers for best practices. So the advantage
14 that ItsOn gave the operator was, You can define policy in a
15 centralized way that was very different from this because it
16 was enforced--right?--versus a suggestion.

17 Q. Based on your testimony, do I understand that you believe
03:30 18 Headwater's patents were meant to be directed to something
19 different from what Google's operating system provides?

20 A. Yes.

21 Q. Just so I'm clear, you understand I'm making a
22 distinction between ItsOn IP and Headwater IP. Those are two
23 different things. Correct?

24 A. Correct.

25 Q. Do you recall being involved in any discussions with

03:31 1 Sprint where specific ItsOn or Headwater patents were
2 discussed?
3 A. No.
4 Q. Do you recall being involved in any discussions with
5 Samsung where specific ItsOn or Headwater patents were
6 discussed?
7 A. No.
8 Q. Are you aware of any conversations between Headwater or
9 ItsOn and Samsung related to specific patents?
10 A. No.
03:31 11 Q. Are you aware of any communications from Headwater or
12 ItsOn to Samsung related to specific patents?
13 A. No.
14 Q. At some point in time during your employment at ItsOn,
15 ItsOn began efforts to integrate its software with Samsung
16 devices. Correct?
17 A. Yes.
18 Q. Are you able to testify under oath about when was
19 Samsung's first awareness of Headwater?
03:32 20 A. No, I would not know without doing research.
21 Q. Do you recall Samsung identifying a -- security threats
22 related to ItsOn's software?
23 A. They were concerned about a type of integration that we
24 were doing, and we modified the integration and we presented
25 -- you know, we had it reviewed by Samsung to meet their

Shawn M. McRoberts, RMR, CRR
Federal Official Court Reporter

03:32 1 security concerns.

2 Q. If Samsung's headquarters was interested in having a
3 version of the ItsOn software that did not operate in the
4 kernel, but had the full capabilities of the existing ItsOn
5 software, was ItsOn able to provide that in the 2015 time
6 frame?

7 A. To the best of my understanding, no.

03:32 8 Q. Your opinion, was ItsOn folding as a company a result of
9 Sprint leaving ItsOn as a customer?

10 A. Yes.

11 Q. Was that the primary reason for ItsOn's failure?

12 A. Yes.

13 Q. ItsOn didn't fail because there were companies out there
14 infringing your patents or Headwater's patents. Correct?

03:33 15 A. No.

16 Q. Okay.

17 A. To the best of my knowledge, no.

18 Q. My question is, outside of the context of this specific
19 patent, would you agree it was known before your inventions
20 for a system to determine whether or not a particular
21 application was a foreground application or it was running a
22 background state?

23 A. Yes.

03:33 24 Q. Would you agree that before your Headwater inventions, it
25 was known to block network traffic?

1 A. No.

2 Q. I dropped another exhibit into the chat, which will be
3 Exhibit 10, which bears the Bates number HW_00004783. For the
03:34 4 record, I'll note that Exhibit 10 is U.S. Patent
5 No. 9,143,976, which has an issue date of September 22nd,
6 2015.

7 And my question to you, once you're able to look over the
8 patent as much as you like, do you see that you're a named
9 inventor on the cover of this '976 Patent?

10 A. Yes.

11 Q. Do you believe there's a distinction between a
03:34 12 determination as to whether an application is running in the
13 foreground or background versus a determination as to whether
14 an application is interacting in the device display foreground
15 with the user?

16 A. Yeah, there's a big difference.

17 Q. And I think you said that Android changed this attribute
18 over time. Is that right?

19 A. Yes.

20 Q. Is that true that Android has developed and changed over
21 time?

22 A. Yes.

03:35 23 Q. So when Mr. Thompson asked you earlier if Android
24 pre-existed Headwater's patents, is it true that a version of
25 Android may have pre-existed Headwater's patents, but not the

1 same version that we see or know of today?

2 A. Correct.

3 Q. Okay. And just to confirm, the version of Android that
03:35 4 existed before Headwater's patents didn't have Headwater's
5 innovations contained within that version that pre-existed
6 Headwater's patents. Is that right?

7 A. Not to our knowledge.

8 Q. When you were developing the ItsOn software for use in
03:36 9 the Sprint roaming controls project -- do you recall that?

10 A. Yes.

11 Q. At the time you were developing that solution for Sprint
12 to implement on Samsung one of its OEMs, did Sprint or Samsung
13 already have that solution in hand?

14 A. No. That's why they asked us to build it.

15 Q. Samsung never asked ItsOn to build any application for
16 Samsung. Correct?

03:36 17 A. Correct.

18 MS. FAIR: That completes this witness by
19 deposition.

20 THE COURT: All right. Before we proceed with any
21 additional testimony, ladies and gentlemen, we're going to
22 take a short recess. If you'll simply leave your notebooks in
23 your chairs, follow all my instructions, and we'll be back
24 shortly to continue with the next Plaintiff's witness.

25 The jury's excused for recess.

1 I HEREBY CERTIFY THAT THE FOREGOING IS A
2 CORRECT TRANSCRIPT FROM THE RECORD OF
3 PROCEEDINGS IN THE ABOVE-ENTITLED MATTER.
4 I FURTHER CERTIFY THAT THE TRANSCRIPT FEES
5 FORMAT COMPLY WITH THOSE PRESCRIBED BY THE
6 COURT AND THE JUDICIAL CONFERENCE OF THE
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