

1 A. Misspelled. Okay.
 2 Q. Perfect.
 3 A. We created a table.
 4 Q. So here this is the code that
 5 tells the Facebook computer to create a table
 6 that can receive the metadata about the minifeed
 7 storage. So here we seem to have a table that
 8 has I think it's twelve entries. Does that
 9 sound about right?
 10 A. I trust you.
 11 Q. Can you -- I drew one of those,
 12 too. Anyway. Eleven or twelve, I think I lost
 13 track. One, two, three, four, five, six, seven
 14 --
 15 A. Eleven.
 16 Q. Eight, nine, ten, eleven. I get
 17 eleven.
 18 So this is the table you were
 19 talking about, so some information from the wall
 20 post was stored in the metadata, the context
 21 information about the wall post was stored in
 22 the wall table, and separately based on the
 23 action, not based on the data, but based on the
 24 action of posting, that's the tracking you were

1 talking about. Information is also entered into
 2 the minifeed table; is that correct?
 3 A. So these are both ways to update a
 4 metadata, correct.
 5 Q. But each one, so the wall table,
 6 though, holds information about the wall post,
 7 and the context information of that data, the
 8 wall post itself. And the minifeed story table
 9 keeps track of the fact that you did post, it
 10 says okay, John did this, he inserted something
 11 on to Mary's wall, and that's the metadata that
 12 we're going to do here; right?
 13 A. I mean, you know, two aspects are
 14 the same thing, because context information also
 15 refers to the actual action. In fact, there is
 16 a time at which you know this particular event
 17 happened, so it's -- I'm not sure that you can
 18 really tell content from the action. It's sort
 19 of an atomic action on deciding, I want to post
 20 this information and as a result the context
 21 component grabs some information, puts in the
 22 metadata, the tracking component, puts some
 23 information in the metadata, and the metadata
 24 gets updated.

1 Q. But we were talking about the
 2 wall, what you posted on the wall. How are you,
 3 Mary? Context information about that data was
 4 captured in the wall table; correct?
 5 A. And in the minifeed storage.
 6 Q. The fact that you post it was also
 7 captured, and what was posted is captured here
 8 in the minifeed storage table; is that correct?
 9 A. Correct. So these are two
 10 different ways in which metadata is updated when
 11 this particular event happened.
 12 Q. Now, you can go ahead and take
 13 that down.
 14 Can you point to Exhibit PTX 906,
 15 please. I think this is a document that we were
 16 looking at before lunchtime. Can you go --
 17 sorry, just to put some context on it.
 18 This is the document about the
 19 photos, get, this is a document telling
 20 developers who are drafting code on -- to be
 21 used with Facebook's website how they would do
 22 that, right, so if they want to get a photo from
 23 Facebook and pull it on to their page, they
 24 would use the instructions from here, is that

1 right, something like that?
 2 A. That is something like that, yeah.
 3 Q. Can we go to the second page. And
 4 let's look at the paragraph that says FQL
 5 equivalent. Now, again, here, FQL was
 6 Facebook's version of the database language that
 7 we were talking about; is that right?
 8 A. Sequel, correct.
 9 Q. And what we have here is a way to
 10 grab some information from Facebook, from a
 11 table inside Facebook; is that right?
 12 A. Correct.
 13 Q. And in particular, I'm really bad
 14 with these. This one is going to say that it
 15 wants to select the information from the photo
 16 table; is that right?
 17 A. That's correct.
 18 Q. So this command would pick up
 19 information from the columns that we talked
 20 about before from the photo table; is that
 21 right?
 22 A. That is correct, with one
 23 exception that it will not return just one line,
 24 but multiple lines.

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1 Q. Thank you.
 2 If a developer wanted to get
 3 information about wall posts instead of about
 4 uploaded photos, this command would change and
 5 it would say select with the appropriate column
 6 header strain from wall; is that right?
 7 A. That is actually -- I'm not sure
 8 if that is correct, because actually -- I mean,
 9 by analogy, the answer would be yes, but I'm not
 10 sure if you can actually do it, because there
 11 are certain things that you can see using FQL
 12 and certain things that you cannot see. But of
 13 course, for example, you could use other pieces
 14 of the API to extract that tracking information
 15 from the metadata and show it to a user.
 16 Q. Thank you.
 17 Dr. Vigna, can you put Claim 25
 18 back on the board, on the easel for me, please.
 19 A. Absolutely.
 20 Q. Thank you, sir.
 21 A. You're welcome.
 22 Q. Now, in Claim 25, I just had a
 23 question about a couple of small little things.
 24 Claim 25 starts out and first off,

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1 this is a dependent claim; right?
 2 A. Pardon?
 3 Q. Claim 25 --
 4 A. Yeah, it's a dependent claim.
 5 Q. And all that means is that in
 6 order for someone to infringe Claim 25, they
 7 have to find everything from Claim 23 plus; is
 8 that right?
 9 A. That is correct.
 10 Q. And that's what's meant by the
 11 language, the system of Claim 21, that's
 12 shorthand for all that other gobbledegook from
 13 21 would get replaced right here; right?
 14 A. Correct.
 15 Q. Then it goes on and it says the
 16 thing of 21 wherein the context component
 17 captures relationship data. What does the word
 18 "wherein" mean here? So the system of Claim 23
 19 what does that -- what does that word mean to
 20 you?
 21 A. To me it means in which, during
 22 which.
 23 Q. Thank you.
 24 Now, you talked a lot about the

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1 Doctrine of Equivalents, I think that was the
 2 end of all of your analyses, you have to go
 3 through the whole thing first, find out if it
 4 infringes literally; in other words, does it
 5 have every single word of every single part of
 6 the claim, and then you have to do another
 7 analysis with the Doctrine of Equivalents.
 8 Is it your position that Facebook
 9 infringes under the Doctrine of Equivalents for
 10 the same reasons that it infringes literally?
 11 A. So, my opinion is that infringes
 12 literally, so that every element of the claim is
 13 directly mapped on an element of the Facebook
 14 system.
 15 Q. Please, go ahead.
 16 A. Okay.
 17 Q. And -- so I understand that.
 18 A. Okay.
 19 Q. And then you also said that
 20 Facebook infringes under the Doctrine of
 21 Equivalents.
 22 A. At least under the Doctrine of
 23 Equivalents.
 24 Q. And I'm asking you is it your

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1 position that Facebook infringes under the
 2 Doctrine of Equivalents for the same means that
 3 it literally infringes?
 4 A. Correct.
 5 Q. But under the Doctrine of
 6 Equivalents, in order for there to be
 7 infringement under the Doctrine of Equivalents,
 8 don't you have to have at least one item of the
 9 claim that's missing?
 10 A. In fact, my position is that it
 11 infringes literally, because all the items are
 12 there. But if somebody had to find some
 13 difference, my position is at least would
 14 infringe under the Doctrine of Equivalents
 15 because those differences would be
 16 insubstantial. So that's what I was trying to
 17 convey. My clear position as expressed in my
 18 report is that there is literal infringement on
 19 every element of the claim. I just want to be
 20 really clear about it.
 21 And also I'm not a lawyer, I'm a
 22 computer scientist and my job is not to discuss
 23 exactly all the nuances of this, but what I
 24 wanted to convey is that these two systems are

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1 so similar that there is direct -- literal
 2 infringement and even if somebody would look at
 3 this and say well, this is not exactly the same
 4 thing of this other thing, substantially, or you
 5 know, the same thing, performing the same
 6 functioning, the same way to achieve the same
 7 result. So at least they infringe under the
 8 Doctrine of Equivalents. And that's my
 9 position. But, I mean, that's how I see this
 10 problem.

11 I mean, it's just like the systems
 12 are so similar that even though somebody can
 13 considering that there is a flaw, at least there
 14 would be an equivalent. Maybe they're not exact
 15 copies, but they're close. If you look at two
 16 people and they look perfectly identical and
 17 they actually are perfectly the same, you say
 18 that guy is a clone here, they're too close,
 19 they look exactly the same. That's what's I was
 20 trying to convey with my statement.

21 Q. And you used the same analysis
 22 from your literal infringement analysis and
 23 applied it to your Doctrine of Equivalents
 24 analysis?

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1 A. So what I did, my analysis
 2 convinced me that there is literal infringement.
 3 And then all the information that I gathered
 4 during my analysis, all the evidence, all the
 5 documents and the source code, and all the
 6 deposition, made me think that these two guys
 7 are clones. But if one shows up with a scar and
 8 the other guy doesn't have it, that's
 9 insubstantial. So at the very least, therefore,
 10 it's the Doctrine of Equivalents that can be
 11 applied. Nonetheless, I see them as clone,
 12 they're the same thing.

13 Q. Did you see any scars on Facebook?
 14 A. Not really.

15 Q. Now, Dr. Vigna, you also
 16 understand that the law requires for
 17 infringement there be just one actor that does
 18 all of the steps. In other words, you can't
 19 have -- you can't find infringement of a claim
 20 if one person performs half of the steps and a
 21 second person performs the other half, unless
 22 you can find some way to show that person A
 23 really made person B do everything else; is that
 24 right?

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1 MR. ANDRE: Objection, Your Honor.
 2 Calls for legal conclusion. He's not a lawyer.

3 MS. KEEFFE: He has an opinion on
 4 contributory infringement and inducement of
 5 infringement.

6 THE COURT: I think the door has
 7 been opened to it. I'm going to overrule the
 8 objection. You can answer the question.

9 THE WITNESS: Can you repeat it?
 10 MS. KEEFFE: Absolutely.

11 BY MS. KEEFFE:
 12 Q. So part of what I heard you
 13 testifying about earlier is one of the ways that
 14 you find that Facebook is infringing is by
 15 virtue of the fact that it has a terms of
 16 service that tells its users how to use the
 17 website; is that correct?
 18 A. Well, it's not just that. There
 19 are also help files and other documents that
 20 tell the user how to follow certain steps and to
 21 follow certain procedures in order to achieve a
 22 certain result.
 23 Q. So in other words, Facebook has
 24 the terms of service, and it has sets of

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1 instructions that people could use if they
 2 wanted to know how to do certain things. Is
 3 that right?
 4 A. Correct.

5 Q. And that through the combination
 6 of those things, if a user were to be infringing
 7 in your opinion, they would really be -- it
 8 would really be Facebook that's doing it because
 9 Facebook has told the user it has to use the
 10 website; is that right?
 11 A. Well, actually in my report, I say
 12 that Facebook infringes because there is very
 13 overwhelming evidence that Facebook's employee
 14 performed all the steps described in Claim 9.
 15 You're referring to the method claim, right?
 16 Q. Correct.

17 A. I look at that, I show the example
 18 testimony, you can find in many of the testimony
 19 the positions that were captured that the
 20 employees of Facebook just does that stuff. And
 21 I know, again, I'm not a lawyer, but my
 22 understanding, okay, which is very superficial,
 23 I never took a class on the law system, but my
 24 understanding is that if the Facebook employees

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1 are performing all the steps or Facebook
 2 provides, you know, encouragement, direction for
 3 others to perform those steps, that is grounds
 4 for infringement. Is that correct or not?
 5 Q. I'm talking about the second part.
 6 Let's put the Facebook employees over here. So
 7 let's just focus on the second part where
 8 Facebook is I think your words were directing or
 9 controlling or encouraging --
 10 A. Encouraging, yeah.
 11 Q. -- the users's actions. Is that
 12 right? And it's your opinion that Facebook
 13 encourages, directs or controls the users
 14 through the terms of service and help files that
 15 give instructions on how to use the website; is
 16 that right?
 17 A. And also other documents. That
 18 was interesting, the enthusiastic document that
 19 was about politicians, hey, politicians, come to
 20 me, use my tool to involve your users and when
 21 somebody will become a fan of you, everybody, so
 22 it was really trying to, you know, convince the
 23 people to perform this action and use the system
 24 and follow those.

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1 Q. Kind of a marketing document,
 2 please use me this way?
 3 A. Yeah.
 4 MS. KEEFE: Can we put up exhibit
 5 628; please. P. P628, please. It should be a
 6 terms of service or a terms of use.
 7 Q. I think you have it in your
 8 binder.
 9 A. PTX 1000 or 1001. Oh, you're
 10 right.
 11 Q. So on this one, so this is a terms
 12 of use that Facebook has; correct? Can we go
 13 into -- I think it's the second page. Where did
 14 I put it in my binder? Hang on one second.
 15 A. It says page two of eight, so
 16 maybe it is the second page.
 17 Q. I think it probably is. Hang on
 18 one second. Nope, my bad, page six. Glad I
 19 didn't make us read all of that. Right?
 20 A. Oh, yeah.
 21 Q. So if we go to page six. Can we
 22 please blow up the very first paragraph. No,
 23 just the first paragraph.
 24 Dr. Vigna, have you read this

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1 paragraph before?
 2 A. Yeah.
 3 Q. Can you read the sentence for me
 4 that starts "Although"?
 5 A. "Although we provide rules for
 6 user conduct and postings, we do not control and
 7 are not responsible for what users post,
 8 transmit or share on the site and are not
 9 responsible for any offense, inappropriate,
 10 obscene, unlawful, or otherwise objectionable
 11 content you may encounter on the site or in
 12 connection with any user content or third party
 13 applications, software, or content."
 14 MS. KEEFE: Thank you, Dr. Vigna.
 15 That's all I have for you.
 16 THE WITNESS: Thank you.
 17 THE COURT: Redirect.
 18 REDIRECT EXAMINATION
 19 BY MR. ANDRE:
 20 Q. Hello, Dr. Vigna.
 21 A. Hello.
 22 Q. Do you have your expert report
 23 with you up there?
 24 A. Yes, I do.

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1 Q. Would you open up your expert
 2 report and go to page 35 of your expert report.
 3 A. Yes.
 4 Q. About midway through the page
 5 you'll see a parenthetical there after the word
 6 cookie. Do you see that?
 7 A. Yes.
 8 MS. KEEFE: Objection. To the
 9 extent that Mr. Andre is going to cite read
 10 from the record or Mr. Vigna is, it's going to
 11 be hearsay.
 12 THE COURT: Mr. Andre.
 13 MR. ANDRE: Your Honor, she opened
 14 the doorway. She asked about him using Burp and
 15 Firebug before his report. This is evidence
 16 that he actually did use those tools in writing
 17 this report. It just gives the cookie
 18 identification that he showed.
 19 MS. KEEFE: Still hearsay, Your
 20 Honor.
 21 THE COURT: I'm going to overrule
 22 it and see where this one question goes. But
 23 we'll see where it goes.
 24 BY MR. ANDRE:

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1 Q. Dr. Vigna, without revealing	1 asked earlier today if you used the tools
2 what's said there, do you see the I.D. where it	2 Firebug or Burp, similar tools when you wrote
3 says EG under cookie?	3 your expert report; correct?
4 A. Yes.	4 A. Yes.
5 Q. Where did you get that information	5 Q. And as you sit here right now, can
6 from?	6 you say if you did or did not use such tools?
7 A. From the analysis of the	7 A. Yes, I did.
8 interaction of the browser with Facebook	8 Q. Okay. That's all I needed.
9 website.	9 THE COURT: Is that it?
10 Q. Is that the same number of the	10 MR. ANDRE: No, on that
11 cookie that you would find when you were doing	11 questioning. Sorry.
12 the Interceptor program here?	12 BY MR. ANDRE:
13 A. Yes. I mean, the value would be	13 Q. In the demonstrations that you
14 of course different because a different user,	14 have done, the demonstrative exhibits, any of
15 but yes, that's the same thing.	15 the demonstratives that you have shown here in
16 Q. So does that indicate to you that	16 the last two days, did they help in any way to
17 you actually used the type of tools you	17 shape your opinion?
18 demonstrated here in Court yesterday and today?	18 MS. KEEFE: Objection, Your Honor.
19 MS. KEEFE: Objection, Your Honor.	19 A. The demonstratives --
20 Leading.	20 THE COURT: Hold on a second,
21 THE COURT: Sustained.	21 Doctor. Sorry.
22 BY MR. ANDRE:	22 Just briefly what's the basis for
23 Q. Turn to the next page, page 36 of	23 the objection?
24 your expert report.	24 MS. KEEFE: He's talking about the
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1 A. Yes.	1 demonstratives he's created in the last few days
2 Q. And after the end of the first	2 forming an opinion that was supposed to be
3 paragraph there, do you see that?	3 disclosed three months ago.
4 MS. KEEFE: Objection, Your Honor	4 THE COURT: That's just a
5 Hearsay.	5 question. Overruled. I don't know if you can
6 MR. ANDRE: I haven't asked yet.	6 --
7 THE COURT: I'm sorry?	7 THE WITNESS: My answer is no, my
8 MR. ANDRE: I just want to know --	8 opinion is my report. And I made those
9 I'm asking him to testify what it says, I'm just	9 demonstratives afterwards to illustrate my
10 asking if he sees it.	10 opinion that was filed with my expert report.
11 THE COURT: I'm going to overrule,	11 Everything is here. This is the best I could
12 but let's hear what the next question is, after	12 do, you know, with hundreds of hours of work.
13 we hear whether he sees it.	13 So I don't think I need more.
14 MS. KEEFE: I'll stay here.	14 MR. ANDRE: Thank you. I have no
15 BY MR. ANDRE:	15 further questions, Your Honor.
16 Q. Do you see that, Dr. Vigna?	16 THE COURT: Okay. Thank you. You
17 A. Yes, I see that. I extracted this	17 may step down, Doctor.
18 information--	18 THE WITNESS: Thank you very much.
19 MS. KEEFE: Objection, Your Honor.	19 Should I leave this computer here?
20 Hearsay.	20 MS. KEEFE: Yes, please.
21 THE COURT: Sustained. Let's move	21 THE WITNESS: My computer?
22 on.	22 MS. KEEFE: No, you can take your
23 BY MR. ANDRE:	23 computer.
24 Q. All right. Dr. Vigna, you were	24 THE COURT: Do you need a couple

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1 couldn't do.

2 THE COURT: Overruled. He can

3 answer the question.

4 BY MS. KEEFE:

5 Q. Could Facebook actually design its

6 system so that the photo table did actually get

7 updated to reflect the fact that you had moved

8 over to my profile page?

9 A. Yes, you could do that.

10 Q. And why have you not done that?

11 A. Frankly, because it would just be

12 a mess.

13 Q. What do you mean by that?

14 A. It would like going and writing on

15 every book you had ever checked out that you

16 were moving around the library.

17 Q. You have created a graphic to

18 illustrate how that might happen?

19 A. Yeah, I did.

20 Q. What are we seeing here?

21 A. So each of the contexts are

22 different pages on the site. Just imagine

23 they're like different user profiles. And this

24 is the photo metadata, the green is the photo

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1 metadata.

2 Q. So the green box around the smiley

3 face is the photo metadata?

4 A. Yeah, for this example. And so if

5 I were moving around and we kept updating the

6 photo metadata, it would just like literally --

7 people moving around on Facebook all day long,

8 we would be like editing all these photos all

9 the time. And you know when you try to edit

10 something on your computer, it slows down a

11 little bit. We would be massively slowing down

12 the system, because every time people would be

13 moving around we would be like trying to change

14 all their photos. It would be expensive. It

15 would be inefficient. And it wouldn't even do

16 anything useful, so we don't do it.

17 Q. Is there ever a time when the mere

18 movement of a user from one say profile page to

19 another profile page will cause the photo

20 metadata in the photo table to be updated in any

21 way?

22 A. No.

23 Q. Would navigation, mere navigation

24 ever change that row in the photo table?

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1 A. No.

2 Q. Would visiting a friend's profile

3 without doing anything more ever change that row

4 in the photo table?

5 A. It would not.

6 MS. KEEFE: Your Honor, this is a

7 very good time for a break.

8 THE COURT: Let's take our

9 afternoon break at this time for fifteen

10 minutes. If you can show the jury out.

11 THE CLERK: All rise.

12 (Jury leaving the courtroom at

13 2:58 p.m.)

14 THE COURT: We'll be in recess.

15 (A brief recess was taken.)

16 THE COURT: I may have gotten

17 confused, but with Mr. Cox we're not going to be

18 showing source code?

19 MS. KEEFE: No, Your Honor.

20 THE COURT: I think I can not only

21 unseal the record, but open the courtroom;

22 correct?

23 MS. KEEFE: Yes, sir, Your Honor.

24 THE COURT: So ask the court

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1 security officer while we bring the jury in, you

2 can remove the papers and open the doors.

3 THE CLERK: All rise.

4 (Jury entering the courtroom at

5 3:15 p.m.)

6 THE CLERK: Please be seated.

7 THE COURT: Welcome back. The

8 witness can return to the stand.

9 MS. KEEFE: Thank you, Your Honor.

10 BY MS. KEEFE:

11 Q. Mr. Cox, what is a page view on

12 Facebook?

13 A. A page view is what we call it

14 when a user looks at a page one time.

15 Q. So would it be accurate to say,

16 then, that you made a page view by coming to my

17 profile page from your profile page?

18 A. Yeah.

19 Q. How many page views are there on

20 Facebook a day?

21 A. It's upwards of twenty billion.

22 Q. Was that billion with a B?

23 A. Billion with a B.

24 Q. How many -- and so again, a page

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1 basically a little piece of information that's
 2 stored on your browser, so the browser is like
 3 Internet Explorer, Safari, Firefox, the cookie
 4 is a little piece of information that gets
 5 stored on there by a website that you're
 6 visiting to make the site more usable.
 7 Q. Does Facebook use or interact with
 8 cookies?
 9 A. Yes, we do.
 10 Q. How does Facebook use cookies?
 11 A. We use cookies for authentication
 12 so you only need to log in one time and then you
 13 can use Facebook and Facebook knows that it's
 14 you. So if you go to Facebook and you're not
 15 logged in, it will ask you for your user name
 16 and password. A lot of sites do this. Once you
 17 enter your user name and password, we put a
 18 cookie which is kind of like a key on your
 19 browser so that as you're navigating through the
 20 site, we can know that you have a key.
 21 It's kind of like a museum where
 22 you go into the museum, you need to show your
 23 I.D. and pay and then they give you a key and
 24 you can use that key if there were locked doors

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1 in the museum you would need a key to open them,
 2 that's kind of how we use cookies.
 3 The museum guard is the login
 4 screen and then we give you a key and you can
 5 use that key to visit the rest the site.
 6 Q. Does the cookie information have
 7 anything to do with the photo metadata table
 8 that we were talking about earlier?
 9 A. No, not at all.
 10 Q. Is information from the cookies
 11 ever used to update metadata in the photo table?
 12 A. No.
 13 Q. Is cookie information ever used to
 14 update information in the wall table?
 15 A. No.
 16 Q. Does Facebook track users using
 17 cookies?
 18 A. No.
 19 Q. Does Facebook track user movement
 20 from one location to another using anything
 21 other than cookies?
 22 MR. ANDRE: Objection, Your Honor.
 23 Calls for testimony, opinion testimony.
 24 THE COURT: Overruled.

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1 THE WITNESS: Yes.
 2 BY MS. KEEFE:
 3 Q. And so does Facebook do that?
 4 A. So we log page views in this big
 5 log which contains all the page views that
 6 happened in the system. A log is just a big
 7 file that you can add stuff to very, very
 8 quickly.
 9 Q. And what is that log used for?
 10 A. It's used for several things.
 11 It's used to analyze how the site is being used
 12 so we know if it's broken, or to find people
 13 that are acting maliciously like robots that are
 14 going and friending people. The way that we can
 15 ascertain and understand what's wrong is just
 16 looking for patterns that are malicious or
 17 erroneous or abnormal in the activity log.
 18 Q. Is information from those logs
 19 ever used to alter metadata in the photo table?
 20 A. No.
 21 Q. Is information from those logs
 22 ever used to update information in the wall
 23 table?
 24 A. No.

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1 Q. Is information from the logs ever
 2 used to update information in the mini-feed
 3 table?
 4 A. No.
 5 Q. A user can fan a page; is that
 6 correct?
 7 A. Yes.
 8 Q. How does that work?
 9 A. Well, first I should tell you
 10 that's called "like" now. It used to be called
 11 become a fan.
 12 Q. So how does a user like a page?
 13 A. So if the privacy settings allow
 14 it, there will be a like button on a page. A
 15 page can be a page for a sports team or a
 16 politician or a celebrity or a business. It can
 17 be a lot of things. A user will visit that
 18 page. There will be a like button on the page.
 19 They click the like button and it's done.
 20 Q. What information is recorded when
 21 a user likes a page?
 22 A. It's very similar to group
 23 membership, there is a table that stores the
 24 people that like the page. I think the table is

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<p>1 Take a look at the second page, second full 2 paragraph. It says right there, each page is 3 stored with an enormous amount of metadata. 4 Isn't that right, Mr. Wiseman? 5 A. Let me just look through this. 6 Yes, I see that. 7 Q. Now, you mentioned you worked on 8 photos; is that right? 9 A. That's right. 10 Q. And you talked about the different 11 information that we heard earlier about what was 12 stored in the photo table; is that correct? 13 A. Correct. 14 Q. The user ID; correct? 15 A. Right. 16 Q. Album ID? 17 A. Yes. 18 Q. The creator? 19 A. Yes. 20 Q. All that information that's stored 21 in the user database; isn't that right? 22 A. It's stored in the photo table 23 which is part of a larger database. 24 Q. And you call it the user database;</p>	<p>1 MS. KEEFE: Objection. Beyond the 2 scope. 3 THE COURT: Overruled. 4 THE WITNESS: I'm sorry. Can you 5 ask that question again? 6 Q. Sure. 7 If you fan a page, information is 8 going to be written in the user database where 9 all these other tables are stored; isn't that 10 right? 11 A. Correct. 12 Q. How about if you import a photo 13 into a group? 14 A. Yes, there will be a change in 15 user database. 16 Q. And the user database is 17 maintained by Facebook; isn't that right? 18 A. Correct. 19 Q. And we heard a little bit of talk 20 about different contents on Facebook; is that 21 right? 22 A. Yes. 23 Q. Did you ever mention -- did you 24 ever hear of Mulligan?</p>
Page 915	Page 917
<p>1 right? 2 A. Yeah. It's one of many tables 3 that are part of the user database. 4 Q. The other tables like the minifeed 5 table are in there? 6 A. Yes, there is a table called 7 minifeed. 8 Q. And it's in the user database; 9 right? 10 A. Correct. 11 Q. How about groups, there is a table 12 for groups, too; right? 13 A. Yes, there is a table for groups. 14 Q. That's in the user database; is 15 that right? 16 A. Correct. 17 Q. So all these tables are all 18 maintained in the user database; is that right? 19 A. The user database is basically the 20 service that we use to query all these different 21 tables. 22 Q. Right. So when you fan a page, 23 that's also stored in the user database, isn't 24 it?</p>	<p>1 A. Yes, I have heard of that. 2 MS. KEEFE: Objection. Beyond the 3 scope. 4 MR. HANNAH: He was talking about 5 the photos and about how they're uploaded. And 6 this is actually directly related to the 7 technology that they use and I'm just going to 8 establish that -- 9 THE COURT: Okay. You said 10 plenty. 11 MS. KEEFE: Absolutely beyond the 12 scope. 13 THE COURT: I'm going to sustain 14 it. Move on. 15 BY MR. HANNAH: 16 Q. That's all I have, Your Honor. 17 Thank you. 18 THE COURT: Redirect, Ms. Keefe. 19 MS. KEEFE: Just one second, Your 20 Honor. 21 THE COURT: Certainly. 22 REDIRECT EXAMINATION 23 BY MS. KEEFE: 24 Q. Can we pull up PTX 882 again for</p>

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

LEADER TECHNOLOGIES,)	Trial Volume 4
INC.,)	
)	
Plaintiff,)	
)	C.A. No. 08-862-JJF-LPS
v.)	
)	
FACEBOOK, INC., a)	
Delaware corporation,)	
)	
Defendant.)	

July 22, 2010
9:00 a.m.

BEFORE: THE HONORABLE LEONARD P. STARK
United States District Court Magistrate

APPEARANCES:

POTTER, ANDERSON & CORROON, LLP
BY: PHILIP A. ROVNER, ESQ.

-and-

KING & SPALDING
BY: PAUL ANDRE, ESQ.
BY: LISA KOBYALKA, ESQ.
BY: JAMES HANNAH, ESQ.

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1 THE COURT: You may.
 2 Ms. Keefe, how much further are
 3 you asking be read?
 4 MS. KEEFE: I read to the bottom
 5 of the page, Your Honor. I know that ends in
 6 the middle of something, so I'm not exactly
 7 sure, do you have another copy, I can pick a
 8 line.
 9 MR. HANNAH: Can I just ask if he
 10 was asked the following question and if he gave
 11 the following answer, Your Honor? I would like
 12 to move on.
 13 MS. KEEFE: Your Honor, I
 14 apologize. My objection would still stand.
 15 THE COURT: Mr. Hannah, if you
 16 want to read through to the top of, well, line
 17 two of 122, you may start at the point that you
 18 want to start.
 19 BY MR. HANNAH:
 20 Q. Mr. Bosworth, during your
 21 deposition, you were asked:
 22 "QUESTION: Has there been
 23 significant changes to minifeed since its
 24 launch?

1 "ANSWER: Not that I know of.
 2 "QUESTION: So is it fair to say
 3 that it operates in substantially the same way
 4 as it did in October 2006?
 5 "ANSWER: For some definition of
 6 the word substantial.
 7 "QUESTION: Significantly.
 8 "ANSWER: Well replacing one
 9 vague, one vague term for another, the term is
 10 not a way to -- I don't know, I can think of no
 11 major structural changes. The description I
 12 gave you would apply today. The description I
 13 gave you today of how it operated at launch
 14 applies today. There have been other changes to
 15 tables, operations, objects, displays, but to
 16 the structure I talked about, I know of
 17 nothing."
 18 MS. KEEFE: Just one quick
 19 clarification, Your Honor. He misread a
 20 statement on lines 21 and 22.
 21 THE COURT: Yes. I know it was
 22 inadvertent, but he did, so let's read from line
 23 15 again, Mr. Hannah.
 24 MR. HANNAH: On 121?

1 THE COURT: On 121 to the end,
 2 there were several words.
 3 BY MR. HANNAH:
 4 Q. "QUESTION: Significantly.
 5 "ANSWER: Replacing one vague, one
 6 vague term for another vague term is not a way
 7 to -- unfortunately I don't know. I can think
 8 of no major structural changes. Whereas the
 9 description I just gave you would no longer
 10 apply today. The description I gave you for how
 11 it operated at launch applies today. There may
 12 have been other changes architecturally to
 13 tables, names, schemas, operations, objects,
 14 displays, but to the structure I talked about, I
 15 know of nothing."
 16 So, Mr. Bosworth, you knew why I
 17 asked if there had been any significant changes,
 18 you knew the answer to that question, didn't you
 19 during your depo?
 20 A. You were as vague when you asked
 21 it then as you are now. I think the question
 22 sounds the same now as it was then. I agree the
 23 definition of substantial. But there is
 24 obviously lots of things we added. You also

1 kind -- I was referring in that deposition to
 2 some structure that I had described earlier, and
 3 that structure much like that I described
 4 earlier matches the description that I gave
 5 here. So yeah, I feel that still stands today.
 6 Q. Okay. Thanks.
 7 Now, let's be clear. The minifeed
 8 table, it stores information that -- it stores
 9 activity information of a user in a minifeed
 10 table; is that right?
 11 A. And that's correct.
 12 Q. And the minifeed table that's in
 13 the user database; isn't that right?
 14 A. Yes.
 15 Q. And you mentioned yesterday that a
 16 number of user actions that result in stories
 17 are displayed on the wall using the minifeed
 18 table; isn't that right?
 19 A. That's correct.
 20 Q. And that includes writing on
 21 someone's wall?
 22 A. Actually writing on someone's wall
 23 wouldn't be used in the minifeed table on that
 24 actual wall, writing on someone else's wall

Page 970

1 would be, so yes, I want to be very precise.
 2 Q. So if I go to someone else's wall
 3 and I write on their wall, I'm going to get an
 4 action on my profile that says that I wrote on
 5 their wall; right?
 6 A. That's correct.
 7 Q. And these actions also include
 8 joining a group; is that right?
 9 A. That's correct.
 10 Q. Fanning a page?
 11 A. Now called liking a page. I have
 12 been using the wrong language, but we just made
 13 that change.
 14 Q. All these actions that are done
 15 that are stored, those are all stored in the
 16 minifeed table on the user database; isn't that
 17 right?
 18 A. Yes.
 19 Q. You also testified yesterday about
 20 a photo table. Do you remember that?
 21 A. I do.
 22 Q. Now, the photo table, that's also
 23 stored in the user database; isn't that right?
 24 A. That's correct.

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1 Q. Now, you mentioned yesterday that
 2 there is no interaction between the minifeed and
 3 the photo table, but both these tables are
 4 stored in the user database; is that right?
 5 A. That's correct.
 6 Q. You also testified about a news
 7 feed. Do you remember that?
 8 A. Yeah.
 9 Q. I'm going to get a little bit into
 10 the weeds on this, but I just want to be
 11 precise. Now, in 2006 when news feed launched,
 12 you were part of that launch; is that right?
 13 A. I was.
 14 Q. All right. Now, when news feed
 15 launched, it was using Q feed servers; is that
 16 right?
 17 A. That's correct.
 18 Q. And the Q feed servers, they would
 19 tail what are called falcon logs; is that right?
 20 A. They would tail falcon logs, yes.
 21 Q. Now, just to explain, falcon logs
 22 is a way to log users' actions on the site; is
 23 that right?
 24 A. Falcon logs are -- that's one way

Page 972

1 to describe it, yeah, absolutely.
 2 Q. And falcon is still used today; is
 3 that right?
 4 A. Falcon is still used today for
 5 some things, although not for news feed.
 6 Q. We'll get to that.
 7 Now, the Q feed servers say they
 8 would tail these falcon logs, they would store
 9 that information in the memory; is that right,
 10 in a memory log?
 11 A. Yeah, not in the log, they would
 12 store it in memory, though. And I kind of
 13 talked about memory yesterday as being this
 14 short-term thing that eventually dissolves, it
 15 is not permanent.
 16 Q. And then workers would come and
 17 they would aggregate that data; is that right?
 18 A. Yeah, there is a process called
 19 the worker.
 20 Q. And then the workers, they would
 21 rank that data; is that right?
 22 A. That's correct.
 23 Q. And then that data would get
 24 written into the user database; is that right?

Page 973

1 A. Into a separate table called news
 2 feed stories.
 3 Q. So the news feed stories would
 4 also be stored in the user database?
 5 A. That's right.
 6 Q. Along with the photo table and the
 7 minifeed table?
 8 A. I think the best way to think
 9 about it is you have a house with like a car and
 10 a bike in it, and then it's got a blender in it,
 11 and those things aren't related but they're all
 12 stored in the house. So I think you're right,
 13 these things are stored someplace.
 14 Q. All in the user database?
 15 A. They were different tables in the
 16 user database.
 17 Q. Now, there was a change to the
 18 news feed in 2008; is that right?
 19 A. Yes.
 20 Q. And that's when you started using
 21 multifeed; is that right?
 22 A. That's correct.
 23 Q. And multifeed, they would tail the
 24 falcon logs as well; isn't that right?

<p style="text-align: right;">Page 1002</p> <p>1 information.</p> <p>2 So what is that? Well, we'll come</p> <p>3 to that. But it's not arbitrary information,</p> <p>4 it's context information. And as you'll see,</p> <p>5 context is really a synonym in this patent for</p> <p>6 what environment you're in, what virtual</p> <p>7 environment you're in, what web page you're on.</p> <p>8 So if the user is in some context,</p> <p>9 there is a context component of the system</p> <p>10 that's capturing this context information. And</p> <p>11 that context information is associated with some</p> <p>12 data that the user creates in this first</p> <p>13 context.</p> <p>14 So they're in some location. That</p> <p>15 location is the context and the user creates</p> <p>16 some data. So it's data created by user</p> <p>17 interaction, so I also want to circle that it's</p> <p>18 created.</p> <p>19 So the user is in this</p> <p>20 environment. They are in some context or</p> <p>21 location in this environment and they undergo</p> <p>22 some act of creation. So if you want to create</p> <p>23 examples, they perhaps create a new document and</p> <p>24 start typing a letter to their mother into it.</p>	<p style="text-align: right;">Page 1004</p> <p>1 everywhere you see dynamically, you can swap in</p> <p>2 the lengthier but more precise expression,</p> <p>3 automatically and in response to the preceding</p> <p>4 events.</p> <p>5 What is the preceding events?</p> <p>6 There is only one candidate for it. There is</p> <p>7 only one thing that's happened so far which is</p> <p>8 the user has created some data in the first</p> <p>9 context.</p> <p>10 The context component has captured</p> <p>11 information about that context and they're going</p> <p>12 to automatically store this context component in</p> <p>13 metadata.</p> <p>14 As you probably know by now,</p> <p>15 metadata is sort of a very general computer</p> <p>16 science term that basically refers to</p> <p>17 information about information, sort of data</p> <p>18 about data.</p> <p>19 So, for instance, you know, as I'm</p> <p>20 sure you heard in some of the discussions</p> <p>21 already, if I have a photograph, a digital</p> <p>22 photograph, right, the digital photo, the file</p> <p>23 kind of containing the bits of the digital</p> <p>24 photograph itself, that we would consider data.</p>
<p style="text-align: right;">Page 1003</p> <p>1 Okay. That's just one example.</p> <p>2 But so now we're starting to see</p> <p>3 the interleaving of steps by the system, steps</p> <p>4 by the user. The system is there. It has a</p> <p>5 context component. The user is in some</p> <p>6 context/location. The user then takes a step of</p> <p>7 creating some data. Okay? And that data, of</p> <p>8 course, being created in the first context of</p> <p>9 the network-based system, so on and so forth.</p> <p>10 Now, the context component is</p> <p>11 supposed to do something automatically in</p> <p>12 response to the mere creation of that new</p> <p>13 content or data by the user.</p> <p>14 So the context component then</p> <p>15 dynamically stores the context information in</p> <p>16 metadata. So that's a lot of words, I realize,</p> <p>17 but I think at the end of the day it's quite</p> <p>18 simple.</p> <p>19 So first of all there is this term</p> <p>20 dynamically, which I would imagine the jury has</p> <p>21 been told has been given a precise meaning by</p> <p>22 the Court. So it's a synonym for automatically</p> <p>23 and in response to the preceding event.</p> <p>24 So there is a reference, so</p>	<p style="text-align: right;">Page 1005</p> <p>1 And then I might have metadata which is sort of</p> <p>2 annotations or additional information about that</p> <p>3 photo that I might want to keep around for</p> <p>4 various reasons, like how high quality is the</p> <p>5 photograph, what is its resolution, what are the</p> <p>6 intended width and heights that it should be</p> <p>7 displayed, so on and so forth, this would be</p> <p>8 what we would call metadata.</p> <p>9 So, you know, the sequence is the</p> <p>10 user is in this first context or environment,</p> <p>11 they create some data in that first context or</p> <p>12 environment, the context component silently</p> <p>13 without any further initiative by the user just</p> <p>14 in response to the act of creation then</p> <p>15 automatically stores metadata about the context</p> <p>16 right, so not about the data per se, but about</p> <p>17 the context, and automatically stores that with</p> <p>18 the data.</p> <p>19 So this is going to be stored with</p> <p>20 the user defined data. And this is just one of</p> <p>21 many places in the patent where it makes it</p> <p>22 clear that what happens is, you know, the user</p> <p>23 creates some data, the system automatically</p> <p>24 wraps up and stores with that piece of data the</p>

Page 1074	Page 1076
<p>1 So my first, you know, 2 disagreement here is that the Facebook 3 technology meets the condition that the metadata 4 he storing the context information as it's 5 clearly called for in the first item. 6 Okay. So let's move on. Right. 7 The tracking component is entirely absent. I 8 think this is perhaps the biggest hole in all of 9 this. There is no component of Facebook which 10 is there perpetually watching users navigate 11 from one page to another and then automatically 12 updating the metadata created in the first 13 context in response to that movement. It's just 14 entirely absent. It's just not there. 15 As an aside, I would just comment 16 there is a good reason it's not there. It would 17 be horrifically impractical. They have 18 500,000,000 users now, much of what users are 19 doing on Facebook is not uploading photos or 20 leaving contents, but they're just browsing 21 around. They're not taking any action other 22 than navigating through the system. And if 23 Facebook had to log perpetually all of that 24 navigation information and furthermore store it</p>	<p>1 THE COURT: Cross-examination. 2 CROSS-EXAMINATION 3 BY MR. ANDRE: 4 Q. Good morning, Dr. Kearns. 5 A. Good morning. 6 Q. My name is Paul Andre. I'm going 7 to ask you a few questions here. 8 A. Please. 9 Q. Let me just ask you a couple of 10 questions that just came up about the Yahoo for 11 Dummies and eBay for Dummies. Is that what 12 computer scientists like yourself use to build 13 software systems? 14 A. These books? 15 Q. Yeah. 16 A. Of course not. 17 Q. Okay. Who are they meant for? 18 A. They're meant and for end users 19 who are, you know, not builders of systems, but 20 users of system. 21 Q. Right. Those books wouldn't teach 22 them how to build Yahoo!, for example? 23 A. They would not. 24 Q. And that wouldn't teach them how</p>
Page 1075	Page 1077
<p>1 with the original data created back in the first 2 context or some previous context, they just 3 never would have been able to have a working 4 system of the scale that they have today. 5 So the tracking component is 6 entirely missing. That's doing this tracking 7 from one context to another. The dynamic 8 updating of the stored metadata based on the 9 change of context is, therefore, also missing. 10 And finally, you know, there is 11 no -- there is no requirement that the user when 12 navigating from that second context do anything 13 there? So this final step wherein the user 14 accesses the data from the second context is 15 also entirely missing. 16 Q. So in your opinion, you would 17 agree that there are some elements of that claim 18 that might be present on the Facebook system? 19 A. Right. 20 Q. But the ones that you identify are 21 the ones that are missing? 22 A. Correct. 23 MR. RHODES: Your Honor, thank 24 you.</p>	<p>1 to build eBay? 2 A. They would not. 3 Q. You didn't do any type of 4 inspection of the back end of Yahoo! or eBay, 5 did you? 6 A. I did not. 7 Q. And you don't know the back end of 8 Amazon, either, do you? 9 A. I do not. 10 Q. Okay. Now, I noticed in your 11 testimony here with Mr. Rhodes that you didn't 12 really take exception with Dr. Vigna's analysis, 13 per se, the technical analysis. 14 A. Well, I think I disagreed with 15 many, many parts of it actually. 16 Q. I'm not talking about if I apply 17 the claims, I'm just talking about how the 18 system operates. 19 A. You know, in his use case, his 20 description of the end user's experience when 21 navigating through various Facebook pages is 22 accurate and easily verified. But, as I said 23 earlier, I think that what matters is the 24 implementation of what's under the hood.</p>

Page 1142	Page 1144
<p>1 A. Same comment to metadata. If you 2 define metadata to be sufficiently broad and 3 inclusive, then sort of updating any piece of 4 metadata is an update to all of the other 5 metadata.</p>	<p>1 I mean, it wasn't a term used very 2 often at that time?</p>
<p>6 Q. Right. So if we get the 7 definition of metadata of just data about data, 8 the broadest possible interpretation, then if 9 new metadata is added, then you update the 10 metadata?</p>	<p>3 A. I would say circa 2002-2003, we 4 were starting to see that term enter sort of 5 popular language. But, you know, a couple of 6 years before that, most people wouldn't have 7 associated that term with any specific kind of 8 technology.</p>
<p>11 A. Yeah. I would agree.</p>	<p>9 Q. All right. And Facebook itself 10 wasn't founded until 2004 and that's by far the 11 largest social networking site in the world?</p>
<p>12 Q. All right. Fair enough. 13 Now, your interpretation of the 14 claims, as you walked through them this morning 15 with Mr. Rhodes, is that essentially all four 16 independent claims all have essentially the same 17 meaning when it comes to the tracking aspect of 18 the claims; correct?</p>	<p>12 A. That's right. But things like 13 Friendster were around like a year or more 14 before that.</p>
<p>19 A. It seems to me, yes.</p>	<p>15 Q. I'll ask you one other question. 16 Do you have Claim 1?</p>
<p>20 Q. And you didn't offer an opinion 21 one way or the other regarding the dependent 22 claims, did you?</p>	<p>17 When you see the word right here 18 based on the change, the word based, that's what 19 I want to say.</p>
<p>23 A. I mean in my report, I think I 24 said brief things about them and the fact that</p>	<p>20 Do you interpret that as because? 21 A. In response to. 22 Q. So -- 23 A. I see that as sort of reinforcing 24 the phrase dynamically in the Court's</p>
Page 1143	Page 1145
<p>1 since they're all dependent, you know.</p>	<p>1 construction.</p>
<p>2 Q. But I'm talking about today with 3 Mr. Rhodes, you didn't talk about the dependent 4 claim others than the fact --</p>	<p>2 Q. I understand. So that's your 3 definition in response to or because of?</p>
<p>5 A. Not in any detail, sir.</p>	<p>4 A. In response.</p>
<p>6 Q. Okay. Now, early in your 7 testimony, you talked about the possible uses 8 for the invention of the '761 patent.</p>	<p>5 Q. So if I wrote a book based on 6 George Washington's life, it's because I wrote a 7 book because George Washington lived?</p>
<p>9 And you said it seemed to be 10 somewhat business related, but it could be for 11 other things as well; right?</p>	<p>8 A. I consider that to sort of be 9 taking what I'm saying out of context here. I 10 mean, we're talking about the patent. We're 11 talking about a precise series of steps to 12 implement my computer.</p>
<p>12 A. Right.</p>	<p>13 Q. I understand your definition. I'm 14 trying to get the word based.</p>
<p>13 Q. And it could be for recreational 14 purposes, for example?</p>	<p>15 A. Yeah. So the definition of based 16 that I would use here would be in response to.</p>
<p>15 A. There's no language in the patent 16 that would exclude that, sir.</p>	<p>17 Q. In response to or because of?</p>
<p>17 Q. And back in -- I believe you said 18 you started one of the early social networking 19 courses there at Penn. That was 2003, 2004 time 20 period?</p>	<p>18 A. And again, taking that -- if you 19 take that and apply it to a book about George 20 Washington's life, that you can find examples, 21 as you can almost always with language, where 22 you know, interpretations are different. But 23 here I think it's in response.</p>
<p>21 A. That's right.</p>	<p>24 Q. And that's just interpretation</p>
<p>22 Q. And that term didn't really gain a 23 lot of notoriety until probably after that; 24 right?</p>	

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

LEADER TECHNOLOGIES,) Trial Volume 5
INC.,)
)
Plaintiff,)
) C.A. No. 08-862-JJF-LPS
v.)
)
FACEBOOK, INC., a)
Delaware corporation,)
)
Defendant.)

Friday, July 23, 2010
9:00 a.m.

BEFORE: THE HONORABLE LEONARD P. STARK
United States District Court Magistrate

APPEARANCES:

POTTER, ANDERSON & CORROON, LLP
BY: PHILIP A. ROVNER, ESQ.

-and-

KING & SPALDING
BY: PAUL ANDRE, ESQ.
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Page 1387	Page 1389
<p>1 are the platform and the phone are actually 2 separate things? 3 A. No, that statement was going to 4 issues of finances and had nothing to do with 5 the technologies that was out. They would be 6 charged out and counted out within The Limited. 7 Q. Have you ever heard the phrase 8 vaporware? 9 A. Yes. 10 Q. What is it? 11 MS. KOBIALKA: Objection, Your 12 Honor. This is beyond the scope of the cross. 13 THE COURT: I don't know where 14 this is going. 15 MR. RHODES: Thank you. 16 THE COURT: Okay. 17 MR. RHODES: It's time to move on. 18 THE COURT: We'll move on. 19 MR. RHODES: I thank you for your 20 indulgence. 21 THE COURT: Okay. 22 Mr. McKibben you can, step down. 23 THE WITNESS: Do I take this? 24 THE COURT: You can leave it for</p>	<p>1 the truth, the whole truth and nothing but the 2 truth so help you God? 3 THE WITNESS: Yes, I do. 4 THE CLERK: Please be seated. 5 THE COURT: Good morning. 6 THE WITNESS: Good morning. 7 DIRECT EXAMINATION 8 BY MS. KEEFE: 9 Q. Good morning, Dr. Greenberg. 10 Could you please briefly run through your 11 education and your degrees for us? 12 A. So I received my bachelor of 13 science from the Gill University in 1976. I 14 think it was quite a long time ago. 15 Sorry, 1980. 16 Q. What was that degree in? You said 17 bachelor of science? 18 A. Bachelor of science. 19 Q. And was there a specialization? 20 A. That was in microbiology and 21 immunology. I then received a diploma of 22 education, that training for teaching. 23 It was '78 my initial one. And 24 in -- I received my master of computer science</p>
Page 1388	Page 1390
<p>1 counsel to remove. 2 MS. KEEFE: Your Honor, we also 3 have more paper for the jury members, and we've 4 discussed it with opposing counsel, and I don't 5 think there's any objections; is that right? 6 MR. ANDRE: There's no objections. 7 THE COURT: So you want the 8 distribute the binders? 9 MS. KEEFE: May I, please? 10 THE COURT: Let's do that now. 11 MS. KEEFE: I tried to decide if 12 it was afternoon or morning. 13 THE COURT: Still morning. 14 MS. KEEFE: Good morning, Your 15 Honor. At this time, Facebook would like to 16 call Dr. Saul Greenberg to the stand. 17 THE COURT: You may do so. 18 THE CLERK: Please state and spell 19 your name for the record. 20 THE WITNESS: Saul Greenberg. 21 S-A-U-L-G-R-E-E-N-B-E-R-G. 22 THE CLERK: Do you swear the 23 testimony you will give to the Court and the 24 jury in the case now pending before it will be</p>	<p>1 in 1984 and my Ph.D. in computer science in 2 1988. 3 Q. And could you briefly run through 4 your work history for us? 5 A. Sure. After I finished my Ph.D., 6 I worked for the Alberta Research Counsel at the 7 post-doctoral research where I was asked to 8 explore the area of computer support and 9 cooperative work. 10 And shortly after -- 11 Q. Sorry. Just real quick, when you 12 use the terms computer operative work; is that 13 what I heard? 14 What is this? 15 A. Computer supported cooperative 16 work. That's essentially how people and teams 17 can work together using computing technology. 18 Q. Sorry. Please keep going. 19 A. Okay. Then shortly after that, I 20 was hired on at the University of Calgary as an 21 assistant professor. 22 And I was pretty fairly rapidly 23 promoted through the rank to associate professor 24 and then full professor. In fact, that's my</p>

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<p>1 position today.</p> <p>2 I'm a full professor with computer</p> <p>3 science at the University of Calgary.</p> <p>4 Q. And what do you do as a full</p> <p>5 professor?</p> <p>6 A. Oh, lots of stuff. Primarily I do</p> <p>7 teaching, research and service.</p> <p>8 So teaching is, of course,</p> <p>9 teaching undergraduate computer scientists about</p> <p>10 the basic concepts in the field. But it also</p> <p>11 involves supervising and mentoring graduate</p> <p>12 students. So these are students who will become</p> <p>13 highly skilled professionals researching in</p> <p>14 their own right and perhaps professors in</p> <p>15 academics as well.</p> <p>16 For research, I work with my</p> <p>17 students. We investigate usually quite novel</p> <p>18 areas of technology.</p> <p>19 We try to -- to -- essentially to</p> <p>20 envision the future to try to make the future a</p> <p>21 better place with technology and to explore the</p> <p>22 possibilities of those.</p> <p>23 And with service, usually that</p> <p>24 involves helping the community as a whole. In</p>	<p>1 A. Well, ground -- so I first got</p> <p>2 into this around 1980, '81. And at that time,</p> <p>3 technology was really designed for programmers</p> <p>4 or for people who spent a lot of time trying to</p> <p>5 figure out computing technology.</p> <p>6 And I was introduced to this</p> <p>7 concept of human computer cooperative</p> <p>8 interaction by one of my professors where it</p> <p>9 tried to really envision how we can create</p> <p>10 technology that's really for everyday people for</p> <p>11 everyday people performing their everyday work.</p> <p>12 And that's -- kind of sounds</p> <p>13 updated now, but because here we are in 2010 but</p> <p>14 back in 1980, that wasn't the case. Technology</p> <p>15 was really only available to highly skilled</p> <p>16 people or for people who spent a lot of time</p> <p>17 training themselves to understand the colloquial</p> <p>18 language of technology.</p> <p>19 Q. As a researcher, do you also write</p> <p>20 code?</p> <p>21 A. Oh, absolutely. So what -- the</p> <p>22 kinds of things that I tend to do in my job has</p> <p>23 a lot to do with designing new ways to think</p> <p>24 about technology.</p>
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<p>1 this case, the academic community comes to some</p> <p>2 consensus about the quality of work that is</p> <p>3 worthy of acceptance and distribution to the</p> <p>4 rest of the community.</p> <p>5 So we do a lot of judging of</p> <p>6 things like papers, whether they're worthy for</p> <p>7 publications. I spend a lot of my time doing</p> <p>8 that.</p> <p>9 I do things such as judging other</p> <p>10 professors to see whether they should be</p> <p>11 promoted or not. So I'm often given --</p> <p>12 Q. Sorry. Is there a special area of</p> <p>13 computer science that you focus on?</p> <p>14 A. Yes, the area I work in is called</p> <p>15 human computer interaction, which is essentially</p> <p>16 designing and computing technology for human use</p> <p>17 for everyday people.</p> <p>18 And within that, I work in a</p> <p>19 subdiscipline called computer supported</p> <p>20 cooperative work. And we often call that CSU.</p> <p>21 So there is a bit of jargon for</p> <p>22 you. Or it's also more colloquially known as</p> <p>23 groupware.</p> <p>24 Q. Why did you get into that field?</p>	<p>1 And often the new ways that we</p> <p>2 want to do things don't really fit on a</p> <p>3 computing platform as they now exist. So we</p> <p>4 spent a lot of time -- and by we, I meant</p> <p>5 myself, my students, my post-docs, research</p> <p>6 assistants, essentially working at the low-level</p> <p>7 plumbing of system design where we spent a lot</p> <p>8 of time building systems, building the</p> <p>9 underlying architectures that will let us</p> <p>10 actually create a new way of envisioning</p> <p>11 computers.</p> <p>12 So, yes.</p> <p>13 Q. Have you been recognized with any</p> <p>14 awards in your field?</p> <p>15 A. Yes. I have several awards from</p> <p>16 some organizations. Starting with the most</p> <p>17 local, I have a university professorship from my</p> <p>18 own university, University of Calgary. And</p> <p>19 that's different from being a professor.</p> <p>20 It's essentially -- it's an award</p> <p>21 of distinction. It's recognized as my</p> <p>22 contributions to the field. And I'm still</p> <p>23 currently holding that.</p> <p>24 It's a five-year special</p>

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1 recognition. It comes with finding and other
 2 things.

3 Within Canada, I have an award
 4 from the computer -- I have to remember the
 5 acronym. It CHCCS Society, which essentially
 6 has recognized my research achievements in the
 7 field. And that was, I think, in about 2005,
 8 2006.

9 But probably the one I'm the most
 10 proud of is I'm what's -- I was elected as a
 11 member of the ACM Chi Academy for essentially my
 12 overall research contributions to the field.
 13 And I should explain that ACM is the association
 14 of computing machinery.

15 It's -- essentially it's an
 16 academic association that really takes care of a
 17 lot of the academic stuff that happens, and not
 18 only in North America, but internationally.

19 And the Chi is the discipline that
 20 I work with in computer human interaction. So
 21 the ACM Chi Academy is essentially a peer
 22 recognition by the group that there's certain
 23 members in the discipline, thousands of
 24 researchers in the discipline that should be

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1 recognized for their contributions in the area.
 2 And I received that in '95 -- in
 3 2005. As I said, I'm very proud of that.

4 Q. And you mentioned that groupware
 5 was one of the words that can be used to
 6 describe your particular special field of
 7 computer science; is that right?

8 A. That's correct.

9 Q. And what is groupware?

10 A. Well, groupware is the underlying
 11 technology that -- it's essentially computing
 12 systems that lets groups of people, teams
 13 actually do their work, pursue their tasks
 14 together.

15 So the field of computer support
 16 of cooperative work is really a much broader
 17 thing. It looks at the design. It looks at the
 18 implementation.

19 But it also looks to see what
 20 people do today. We actually go out in the
 21 field. We watch what people do.

22 And we try to use that and
 23 influence our design. Groupware is the actual
 24 technology. It's the system and all the time

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1 that we build.

2 Q. Can you give us an example of
 3 something that would be a groupware, a product
 4 in the market today?

5 A. Sure. There's -- in fact, I
 6 suspect many members of the Court and jury has
 7 already experienced this of these computers.

8 So the small kind of things that
 9 you use, like Instant Messenger or Skype, maybe
 10 even email at one extreme is a type of
 11 groupware. It lets you interact with other
 12 people through the technology.

13 But more broadly, there's more
 14 enterprise-level systems that are really there
 15 to try to support teams to pursue some task
 16 where the -- you know, in an organizational
 17 setting, there could be a team that's working
 18 toward a goal.

19 And they have, for example, a
 20 whole bunch of documents that they're producing.
 21 Maybe people are working across distributed
 22 sites, so the technology will help them
 23 communicate with each other. It will also help
 24 them coordinate their activities, and as well it

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1 will help them share and store all their
 2 artifacts, their documents, those kind of
 3 things, in a way that goes beyond what we can
 4 currently do with our traditional computers that
 5 are designed for one person to use them.

6 Q. Have you ever created a groupware
 7 product?

8 A. Yes.

9 Q. What was it called?

10 A. We actually created a lot of
 11 groupware products, and the typical way we work
 12 in our lab is that we build our systems and we
 13 write papers about them and then we almost
 14 always try to place our systems online to give
 15 them to others. We make them freely available
 16 so other researchers can build upon our
 17 platforms or try them out to see if what which
 18 say is true.

19 One of the systems we build is
 20 team rooms. To give you a flavor of it, we did
 21 that, I guess, in the early 2000s. Team rooms
 22 was a system that essentially lets groups of
 23 people create virtual rooms where you can create
 24 a room around a topic of interest.

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1 One or more people can go in the
 2 room, bring applications to the room, bring work
 3 and documents and their own data. It's a real,
 4 physical room that you work with a team. You
 5 can leave stuff in there, and stuff stays where
 6 it is.
 7 People can come and go in it, and
 8 everything they have in the room is available to
 9 them. In a way it sets a context or environment
 10 for them to do their work together over time.
 11 Q. Just one last background question.
 12 Have you ever been mentioned in connection with
 13 any rankings in the computer industry in terms
 14 of your papers or groupware?
 15 A. Sure. One -- well, the way
 16 academics are normally ranked is by the
 17 publication. That's the corner of realm. It's
 18 how we spread our ideas around.
 19 There's two external sites that I
 20 know that have ranked me. There's one site
 21 called the HCR, human computer interaction
 22 video. I don't go there. They collect the
 23 papers of everything in my area. I'm listed as
 24 I believe -- as think I'm the third from the top

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1 author on their top authors list, and this is of
 2 thousands.
 3 And more recently I just came back
 4 from Microsoft, and they have a service there
 5 called Microsoft academic search they just
 6 released over the last recent period of time,
 7 and if you go into their site and look up
 8 human-computer interaction over the last ten
 9 years, I believe I'm the third most ranked at
 10 that one, and I'm the fifth one at HCR, and
 11 these are done by external organizations I have
 12 nothing to do with.
 13 Q. Thank you, Dr. Greenberg.
 14 MS. KEEFE: At this time, Facebook
 15 would like to proffer Dr. Greenberg as an expert
 16 in the field of computer science.
 17 MR. ANDRE: No objection.
 18 THE COURT: So recognized.
 19 MS. KEEFE: Thank you, Your Honor.
 20 BY MS. KEEFE:
 21 Q. Dr. Greenberg, have you been
 22 retained as an expert in this case?
 23 A. Yes, I have.
 24 Q. And are you being compensated for

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1 the time you're working with us in this case?
 2 A. Yes.
 3 Q. And how much are you being paid?
 4 A. \$450 an hour.
 5 Q. Were you asked to perform any
 6 tasks in this case?
 7 A. Yes, I was.
 8 Q. And what were you asked to do?
 9 A. I was essentially asked to do two
 10 different things.
 11 The first was to look -- to
 12 essentially compare the provisional application
 13 filed by Leader with the actual 761 patent.
 14 Everybody knows what I mean about the 761
 15 patent?
 16 Q. I think we heard about it a lot.
 17 A. To the 761 patent. I was
 18 essentially asked to compare the two to see if
 19 the provisional application discloses each and
 20 every element in the asserted claims of the 761
 21 patent and to render an opinion as to whether it
 22 does. And if it didn't disclose them, I believe
 23 that Leader was not entitled to the filing date
 24 of the provisional application.

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1 Q. Were you asked to perform another
 2 task?
 3 A. Yes.
 4 Q. What was that?
 5 A. The second task was to take the
 6 761 and essentially to judge its novelty. That
 7 is, to compare each and every asserted element
 8 in the asserted claims of the 761 patent against
 9 several references. That is, several
 10 publications or systems that appeared before the
 11 filing of the -- either the provisional and 761
 12 patent.
 13 And if in fact the ideas in the
 14 761 patent appeared earlier, then it's not
 15 novel, so that in the words, it means that the
 16 patent would be invalid.
 17 Q. Did you prepare a slide to show
 18 the two things that you were asked to do?
 19 A. Yes, I did.
 20 Q. I believe you already testified
 21 the first task. That's what's under the first
 22 number there; is that right?
 23 A. That's right. So my first opinion
 24 is the provisional patent application did not

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<p>1 disclose every element of the asserted claims of 2 the 761 patent.</p>	<p>1 So what materials you used and what documents 2 you relied on in coming up with your opinion.</p>
<p>3 Q. And did you come to an opinion 4 regarding your second task, whether or not the 5 patent was valid?</p>	<p>3 A. Sure. Should I start with the 4 provisional?</p>
<p>6 A. Yes, I did.</p>	<p>5 Q. Let's start with the provisional.</p>
<p>7 Q. What was that?</p>	<p>6 What documents did you use in order to come to 7 your opinion that the provisional did not 8 disclose all of the elements of the final 9 patent?</p>
<p>8 A. As you can see here, I compared 9 each asserted claim of the 761 patent to a 10 variety of references, and for the first three 11 there, we see U.S. patent 6236994. I'll call 12 this Swartz from now on. Swartz is the inventor 13 assigned to.</p>	<p>10 A. For the provisional, I looked only 11 at the provisional, and I compared all the 12 material, and I compared that extensively with 13 what was in the asserted claims of the 7612 14 patent. I would look at, for example, claim 15 one, each one of the elements, and I would 16 search through the provisional application to 17 see if that idea was there.</p>
<p>14 Everything in the asserted claims 15 was in Swartz, and the iManage 6.0 reference 16 manual, and I again found all the ideas in the 17 asserted claims in each and every element of the 18 asserted claims in the iManage system.</p>	<p>18 Q. And in order to understand what 19 the claims of the issued patent covered, how did 20 you do that? Did you have any documents that 21 educated you as to what the language of the 22 claims meant?</p>
<p>19 And I also looked at the European 20 patent application, EP 10873067 AT, which I'll 21 call Hubert, and I found each and every element 22 of the asserted claims in the Hubert patent were 23 in the 761 patent -- I should correct myself, 24 For Swartz and Hubert. That's each and every</p>	<p>23 A. Yes, the Court construed certain 24 terms that was in the 761 patent, so I followed</p>
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<p>1 asserted claim except for sixteen.</p>	<p>1 that definition when they were there.</p>
<p>2 If you look at these patents in 3 combination with another patent called Ausems, 4 then claim sixteen, the idea is also there.</p>	<p>2 If the Court did not construe or 3 define any terms, I went to the patent itself to 4 see if they provided a definition.</p>
<p>5 Q. If I understand you correctly, 6 you're saying that all of the claims would be 7 invalidated by -- every claim except sixteen 8 would be invalidated by Swartz or iManage or 9 Hubert by themselves; is that correct?</p>	<p>5 If they did not provide a 6 definition, I used the definition that would be 7 known to one skilled in the art.</p>
<p>10 A. It's almost correct, except for 11 sixteen by Swartz or Hubert alone. iManage does 12 disclose claim sixteen.</p>	<p>8 These slides are bit of evidence 9 back up.</p>
<p>13 Q. And then for claim sixteen, would 14 claim sixteen be invalid as well?</p>	<p>10 Q. I think you were saying if there 11 wasn't a definition provided by the Court, you 12 used the patent itself to find the definition or 13 you used what one of ordinary skill in the art 14 would use.</p>
<p>15 A. Well, I believe claim sixteen, if 16 you look at what's in the claim, it would really 17 be obvious to one skilled in the art to a 18 practitioner of the day.</p>	<p>15 A. That's correct.</p>
<p>19 Aside from that, it would be 20 obvious in you combine the Ausems patent with 21 any one of the other patents.</p>	<p>16 Q. What is one of ordinary skill in 17 the art in computer science in this case?</p>
<p>22 Q. We'll go into those with detail.</p>	<p>18 A. One of ordinary skill in the art, 19 as I believe, is somebody with a bachelor of 20 science in computing science or computer 21 engineering or equivalent and a couple years of 22 experience.</p>
<p>23 Before we do that, I'd like to 24 learn about how you went about your analysis.</p>	<p>23 I kind of know what students can 24 do as soon as they graduate, and you need a</p>

<p style="text-align: right;">Page 1407</p> <p>1 couple years experience to mature and understand 2 what you do and how to build products within 3 that. 4 Because of the nature of the 761 5 patent, they would have to have background in 6 networking, in distributed systems, in 7 weapon-based platforms, and a little groupware. 8 Doesn't have to be extensive. 9 Q. When you were doing your analysis 10 regarding the other pieces of prior art Swartz 11 and iManage and Hobert, did you use a different 12 definition or different process for the claim 13 terms? 14 A. No, I used exactly what was 15 construed by the Court then what the patent said 16 and then failing that, what one of ordinary 17 skill in the art would understand those words to 18 mean. 19 Q. So right now, Dr. Greenberg, I'd 20 like to step us through your first opinion, the 21 one regarding the provisional application, and 22 whether or not the provisional application 23 contains a disclosure of each and every element 24 of the issued claims.</p>	<p style="text-align: right;">Page 1409</p> <p>1 A. Well, as I mentioned, the law 2 states that I have to confine myself to the 3 provisional application. I am, of course, 4 allowed to apply my understanding as one skilled 5 in the art or as I would interpret one skilled 6 in the art at the time of the filing, how they 7 would understand the terms in the provisional 8 application. As a matter of law, that's how it 9 is. 10 Q. What conclusion did you make when 11 you started this analysis? 12 A. The provisional application -- I 13 have a graphic on this. 14 The provisional application 15 defines a whole variety of -- defines ideas in 16 it. There is some stuff in it. When I compared 17 it to the 761 patent, the 761 patent has 18 substantially more material in it, and it's not 19 just more words, but it has substantially new 20 ideas, new parts of invention, that just don't 21 appear in the provisional anywhere. 22 Q. Doctor, before we move on, I 23 notice you have claim numbers up there. Why did 24 you choose those claims?</p>
<p style="text-align: right;">Page 1408</p> <p>1 A. Yes. 2 Q. I think you have an exhibit in 3 your binder, PTX 3. Can you turn to that. 4 A. I see it. 5 Q. What is that? 6 A. This is the provisional 7 application. 8 Q. And again just for clarity, when 9 you were doing your analysis comparing the 10 claims of the issued patent to the provisional 11 application, did you confine yourself to just 12 those two pieces of paper? 13 A. Yes, I did. 14 Q. Why did you do that? 15 A. My understanding of patent law is 16 that for a patent to be entitled to the date of 17 provisional application, the provisional 18 application by itself has to disclose each and 19 every element of the claim, and if it doesn't, 20 the patent is not allowed to use the filing date 21 of provisional application. 22 Q. And so why didn't you look to 23 anything else that was in existence at the same 24 time?</p>	<p style="text-align: right;">Page 1410</p> <p>1 A. Yes, because when you look at the 2 ideas that are in the claims, those ideas are 3 covered by the material added to the 761 patent 4 and they're not in the provisional application. 5 The provisional application does overlap with 6 what's in the patent, but not in the ideas that 7 are in the claims. That's all the new stuff 8 that was added. 9 Q. And why did you pick these 10 particular claims? 11 A. Well, my understanding is that 12 these are the claims being asserted in the case, 13 and that's where I focused my attention. Other 14 claims may talk about what's in the provisional 15 application, but that's not what's at issue 16 here. 17 Q. Did you analyze each and every one 18 of these claims and compare it to what was 19 disclosed in the provisional application? 20 A. Yes, I did. 21 Q. And what did you -- you said that 22 there was some things in these claims that was 23 not in the provisional application. What do you 24 mean by that?</p>

<p style="text-align: right;">Page 1411</p> <p>1 A. Well, what I did was, I looked for 2 the ideas, what's in each one of the elements. 3 Can I find a match of the provisional 4 application? 5 So for example, at one level, are 6 the words there? At another level, if the words 7 aren't there, is the idea there? 8 There's some code included in the 9 provisional application. I looked at the code, 10 and I asked, does the code actually have any of 11 these words or ideas within it? 12 So that's how I did my comparison. 13 Q. Can you pull up a slide of claim 14 one, please. Just go to the patent itself and 15 show claim one. 16 So for example, this is claim one; 17 is that right? 18 A. Right. 19 Q. Now, are there -- what elements in 20 claim one are you talking about when you say 21 that there are ideas that are in the claim that 22 are not in the provisional application? 23 A. We see two major elements. We see 24 two paragraphs.</p>	<p style="text-align: right;">Page 1413</p> <p>1 which is a little figure we see clearly. 2 So this is obviously important. 3 It's on the very front of the patent, and 4 there's -- on the left side we see this thing 5 called a context component and this thing called 6 a tracking component. This is part of the 761 7 patent. 8 Q. Are those figures in the 9 provisional patent? 10 A. This figure is not in the 11 provisional patent. There's no figures at all 12 in the provisional patent. 13 Q. Are there more figures in the 14 issued patent? 15 A. There's twenty or twenty-one. 16 However you count in the issued patent, there's 17 quite a lot more. 18 Q. Are there other differences 19 between, just facial differences between the 20 provisional patent application and the final 21 patent? 22 A. Well, the provisional application 23 is a lot shorter, for one thing. And I 24 actually --</p>
<p style="text-align: right;">Page 1412</p> <p>1 In the first, we see a 2 "computer-implemented context component for 3 capturing context information associated with 4 user defined data." One of the things I looked 5 for was a context component in the provisional 6 that captures context information. Is there 7 something there that's associated with user 8 defined data? 9 The second paragraph says there's 10 a computer-implemented tracking component for 11 tracking of change of the users from the first 12 context to the second context. I looked at the 13 provisional to see is there anything there that 14 tracks a user moving from one context to 15 another. 16 And the third thing, dynamically 17 updating the stored metadata based on the 18 change. I looked to see, first, is there any 19 notion of metadata and any notion of dynamically 20 updating the metadata on change. 21 Q. Is there anything in the patent 22 that talks about these things you're mentioning? 23 A. Absolutely. I believe the figure 24 on the face of the patent, that is Figure 1,</p>	<p style="text-align: right;">Page 1414</p> <p>1 Q. Did you prepare a slide? 2 A. Yes. So here's a good 3 side-by-side comparison. 4 The provisional application, as I 5 mentioned, is quite a bit shorter. We see 6 there's nine and a half pages of text, plus 7 eight and a half pages of code. 8 And it's in quotes because I don't 9 actually know if it's working code or just 10 something that was written that never actually 11 ran. There's nothing in the application that 12 says that. 13 Whereas the final patent 14 application has 39 pages of text. You know, so 15 this is substantially more stuff in it. 16 The provisional has no figures to 17 illustrate a concept whereas the final patent 18 application has 22 figures. 19 I mention words like tracking, 20 context, context data, metadata. There's 21 absolutely no mention of the word tracking in 22 the provisional application. And in the final 23 patent application, tracking is an element of 24 every single asserted claim, and it's also</p>

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<p>1 described thoroughly in the specification. 2 In the provisional application, 3 there's no mention of context data or this idea 4 of metadata. Well, there is of storing 5 metadata. 6 There is one mention of metadata 7 that I'll talk about shortly. But there's no 8 mention of these terms of context data at all. 9 Whereas in the final patent, their 10 context data and metadata are in -- are elements 11 of each and every one of the independent claims. 12 And it's also claimed in the -- described in the 13 specification. 14 Q. And you mentioned that the 15 metadata is used once in the provisional, but 16 it's not used as -- the same way in the final? 17 A. And again, metadata is in each and 18 every one of the elements of the asserted -- of 19 the independent claims that are asserted in this 20 case. 21 Q. Can you describe for us some of 22 the examples of the description of context 23 components and context data that you found in 24 the patent itself? And I think you had some</p>	<p>1 provisional, I'd like you to walk us through a 2 little bit of how those elements are described 3 in the final patent application. 4 A. Sure. 5 Q. So I think you actually had some 6 slides that showed some portions of the patent 7 that describe these elements; is that right? 8 A. There is columns from the patent, 9 yes. 10 MS. KEEFE: Can you bring up 11 Columns 6 and 7? 12 BY MS. KEEFE: 13 Q. Does this look familiar? 14 A. Yeah. Yeah, it does. 15 Q. What is this? 16 A. So this is from Column 6 of the 17 patent. So here -- here we see it clearly says, 18 The system 100 also includes a context component 19 in association with the figures context to 20 monitor and generate context data associated 21 with data operations of the user in the first 22 context. 23 Essentially what this means is 24 that there, context component is monitoring what</p>
Page 1416	Page 1418
<p>1 slides for that as well. 2 A. Sure. 3 Q. Column 6. 4 A. Well -- 5 Q. Oh, go ahead. Did you want to 6 talk about this? 7 A. Sure. Maybe we can just bring 8 them both up at the same time. Okay. 9 This just elaborates a little bit 10 more about what I said before. Tracking appears 11 zero times. Track appears zero times. 12 Metadata appears once. And as I 13 mentioned, not in the way it's used, access 14 appears twice. And whereas these terms are 15 really heavily used in the final patent. 16 They appear 64 times. So that was 17 back to the question of, you know, on the face 18 level, you know, are there stark differences. 19 And the answer is yes. 20 Q. Okay. So you mentioned that these 21 terms appear numerous times in the final 22 application? 23 A. That's correct. 24 Q. Before we dive into the</p>	<p>1 people are doing with their data and it's 2 generated context data captioning that 3 information. 4 Q. And is the same true with respect 5 to the tracking component you were mentioning in 6 the claims? 7 A. Yes, it is. 8 Q. Can we look at Column 7? 9 A. Yeah. So here's another excerpt. 10 And here at the bottom we see -- 11 let's see. So such user activities and data 12 operations in the one or more context of the 13 system 100 and movement of the user between 14 context are tracked using a tracking component. 15 So what this is talking about here 16 is that we have a tracking component in a bit of 17 the software that's actually watching what's 18 going on, that's watching how the user moves 19 from one context to another. And it's 20 captioning that as information. 21 Q. And is it your opinion that either 22 of these concepts, which are in all of the 23 claims, do they appear anywhere in the 24 provisional application?</p>

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<p>1 A. No. They don't appear whatsoever.</p> <p>2 And again, I have to stress, and I think this is</p> <p>3 really important, it's not just that the words</p> <p>4 don't appear, but the concept itself just isn't</p> <p>5 there in the provisional.</p> <p>6 Q. Is the process of moving between</p> <p>7 contexts, so moving from one context to another,</p> <p>8 discussed in the later -- in the later patent</p> <p>9 application, just that idea of movement, not</p> <p>10 just tracking?</p> <p>11 A. It's discussed in the patent.</p> <p>12 Yes.</p> <p>13 Q. Could you show Figure 2 again,</p> <p>14 please? How does Figure 2 show that?</p> <p>15 A. Well, there's also some associated</p> <p>16 text with this. I don't know if you can bring</p> <p>17 this side by side.</p> <p>18 Q. Column 7.</p> <p>19 A. That may be a bit -- can everybody</p> <p>20 see that?</p> <p>21 So here this -- this essentially</p> <p>22 describes the basic process that's handled by</p> <p>23 pretty well all of the asserted independent</p> <p>24 claims of the patent.</p>	<p>1 this -- actually the first question: Does this</p> <p>2 language appear in the provisional application,</p> <p>3 the language that you were just describing?</p> <p>4 A. No, it does not.</p> <p>5 Q. And does Figure 2 appear in the</p> <p>6 provisional application that you've been</p> <p>7 describing?</p> <p>8 A. They're -- not only does Figure 2</p> <p>9 not appear, there's nothing in the provisional</p> <p>10 application that even textually describes what's</p> <p>11 in Figure 2.</p> <p>12 Q. Aside from the exact language, is</p> <p>13 there any description using any language of the</p> <p>14 concepts that are disclosed in the paragraph</p> <p>15 that you've been talking about here?</p> <p>16 A. No, it's not. It's not in the</p> <p>17 description.</p> <p>18 It's not in the examples given,</p> <p>19 nor is it in the code that was provided.</p> <p>20 Q. So I think you've actually</p> <p>21 mentioned three things, if I remember right.</p> <p>22 You mentioned that the provisional application</p> <p>23 did not have any concept of metadata storage or</p> <p>24 updating; is that right?</p>
Page 1420	Page 1422
<p>1 We have at the beginning here, you</p> <p>2 know, it starts user is associated with a first</p> <p>3 context. They do some stuff. You know, user</p> <p>4 sends application. They may perform data</p> <p>5 operations.</p> <p>6 That is the notion of context</p> <p>7 component. You know, watching what's going on</p> <p>8 and actually looking at this.</p> <p>9 But then we see the step 206,</p> <p>10 where it says the user changes context, and</p> <p>11 there's a text that describes it. It says at</p> <p>12 206, the user changes context from the first</p> <p>13 context to a second context. So there's the</p> <p>14 movement there.</p> <p>15 And then at 208, it says the data</p> <p>16 and applications are then automatically</p> <p>17 associated with the second context. So there's</p> <p>18 a consequence there.</p> <p>19 But we see this idea of user</p> <p>20 changing context is part of the general flow</p> <p>21 that's described in the '761 patent. And this</p> <p>22 is pretty well what happened with all of the</p> <p>23 independent claims being asserted.</p> <p>24 Q. And does a description like</p>	<p>1 A. That's correct.</p> <p>2 Q. In fact, can I get a --</p> <p>3 MS. KEEFE: Your Honor, may I</p> <p>4 approach behind to write on a white board? To</p> <p>5 put a white board up and write on it?</p> <p>6 THE COURT: You may.</p> <p>7 MS. KEEFE: So I apologize already</p> <p>8 for speaking from here. I'll be very loud</p> <p>9 before I go back over there.</p> <p>10 BY MS. KEEFE:</p> <p>11 Q. So I believe that you actually</p> <p>12 said that the first thing that you couldn't</p> <p>13 find -- and by the way, I'm only doing this</p> <p>14 because Dr. Greenberg says his handwriting is</p> <p>15 very bad.</p> <p>16 A. It's really bad.</p> <p>17 Q. I think you said the first concept</p> <p>18 that's all throughout all of the claims as well</p> <p>19 as the specification of the patent was the idea</p> <p>20 of metadata storage and updating; is that right?</p> <p>21 A. That's correct.</p> <p>22 Q. And then if I remember right --</p> <p>23 MR. ANDRE: Your Honor, objection.</p> <p>24 Counsel is leading. He can tell her what to</p>

<p style="text-align: right;">Page 1423</p> <p>1 write.</p> <p>2 THE COURT: Sure. Sustained.</p> <p>3 BY MR. RHODES:</p> <p>4 Q. What were the other two concepts</p> <p>5 that you did not find from the claims of the</p> <p>6 patent in the provisional application?</p> <p>7 A. Okay. So the other -- I am just</p> <p>8 going to bring the patent, just use the right</p> <p>9 language in front of me. So this is '761 here.</p> <p>10 So essentially the context</p> <p>11 component for captioning context. For caption</p> <p>12 context information.</p> <p>13 Q. Okay. And another?</p> <p>14 A. And the third one is tracking</p> <p>15 component for tracking a change of the user from</p> <p>16 the first context to a second context.</p> <p>17 Q. Does that look right?</p> <p>18 A. That's correct.</p> <p>19 Q. Okay. So I'd like to go through</p> <p>20 these with you one by one.</p> <p>21 A. Sure.</p> <p>22 Q. So why don't we take the first one</p> <p>23 first.</p> <p>24 Why do you think that there is no</p>	<p style="text-align: right;">Page 1425</p> <p>1 paragraph right at the middle, we see the word</p> <p>2 metadata. If we can highlight that.</p> <p>3 There it is. So we see the</p> <p>4 context component dynamically storing the</p> <p>5 context information in metadata associated with</p> <p>6 the user-defined data. So that is the first</p> <p>7 place it appears.</p> <p>8 Essentially the context component</p> <p>9 is taking this information and it's storing</p> <p>10 it. And metadata, by the way, is just data</p> <p>11 about data. That's the Court's construction.</p> <p>12 That's the everyday use of the Court's</p> <p>13 construction, I believe.</p> <p>14 The second paragraph says metadata</p> <p>15 based on the change. So what this is talking</p> <p>16 about is that the tracking component is watching</p> <p>17 the person moving from one context to another,</p> <p>18 And as part of that, it takes that metadata, the</p> <p>19 stuff that was stored in the first context and</p> <p>20 is updating it again. Essentially is adding</p> <p>21 new.</p> <p>22 It's either changing the</p> <p>23 information or adding things associated with</p> <p>24 that information.</p>
<p style="text-align: right;">Page 1424</p> <p>1 description of metadata storage or update in the</p> <p>2 provisional application?</p> <p>3 A. Well, it's just not there. In</p> <p>4 fact, they -- the term metadata is used only</p> <p>5 once, and it's used as a description of what was</p> <p>6 available previously.</p> <p>7 And the way it's used is in a</p> <p>8 different way from the way it's described in the</p> <p>9 '761 patent.</p> <p>10 In fact, I have some -- I've</p> <p>11 highlighted some materials about that.</p> <p>12 Q. Actually, no, before we bring that</p> <p>13 up --</p> <p>14 A. That's not --</p> <p>15 Q. No. No, before we bring that up,</p> <p>16 so with metadata, I just want to track up and</p> <p>17 make sure this concept is very clear.</p> <p>18 Where does metadata storage and</p> <p>19 update -- in fact, let's bring up Claim 1 again.</p> <p>20 Where does metadata and storage</p> <p>21 appear in Claim 1?</p> <p>22 A. Okay. So it appears in -- let's</p> <p>23 take a look at this.</p> <p>24 So if we look at the first</p>	<p style="text-align: right;">Page 1426</p> <p>1 Q. Is this an important context in</p> <p>2 the claim?</p> <p>3 A. Well, absolutely. It appears in</p> <p>4 every -- as I mentioned, it appears in every one</p> <p>5 of the asserted independent claims.</p> <p>6 And it's talked about extensively</p> <p>7 throughout the patent. Essentially it says in</p> <p>8 computer science terms, it says, this is a</p> <p>9 method by which we will take this information</p> <p>10 and we'll structure it and store it for later</p> <p>11 access and use.</p> <p>12 Q. Can you show us where the concept</p> <p>13 of metadata is in Claim 9, please?</p> <p>14 A. Sure. Let's move to Claim 9.</p> <p>15 It's -- we'll see that there's --</p> <p>16 it's all very similar, although the wording</p> <p>17 around it is somewhat different. So, again, in</p> <p>18 the middle, we see dynamically -- well,</p> <p>19 beginning of the second paragraph, we see</p> <p>20 dynamically associating metadata with the data.</p> <p>21 So it appears there again.</p> <p>22 And then it says the data and</p> <p>23 metadata stored on a storage component. We see</p> <p>24 even later on, the metadata -- what the metadata</p>

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<p>1 consists of, what it includes. So information 2 related to the user, the data, the application 3 and the user environment.</p>	<p>1 the provisional application? 2 A. Well, as I mentioned, the word 3 metadata appears only once and it appears in a 4 completely different context. In fact, as part 5 of the background of the invention.</p>
<p>4 In the last paragraph, we see 5 dynamically updating the stored metadata. And 6 again, it gives a bit of a description of what 7 it's doing. So there it is in Claim 9.</p>	<p>6 And there's -- there's nothing 7 else in the -- in the provisional that actually 8 has any concept of metadata, nor is there 9 anything in the code, nor is there anything in 10 the examples. I didn't see it.</p>
<p>8 Q. And is the concept in Claim 21?</p>	<p>11 Q. Can you please pull up the 12 background of the provisional.</p>
<p>9 A. Let's look at Claim 21, and we see 10 something very similar. We see in the second 11 paragraph, again dynamically associating 12 metadata with the data. And again, the data, 13 metadata stored, in this case, on a web-based 14 computing platform.</p>	<p>13 So is this the paragraph that 14 describes metadata? 15 A. Yes. So let me just see where it 16 is, if it's this particular part. 17 Maybe it's the next paragraph. 18 I'm not sure.</p>
<p>15 There we see the metadata includes 16 information and it says what's in it.</p>	<p>19 Q. How about Paragraph 11? 20 A. Yeah, keep going.</p>
<p>17 We see in the one, two, three, 18 fourth paragraph dynamically associating the 19 data and the application with the second user 20 workspace in the metadata.</p>	<p>22 There we go. In fact, if you 23 include Paragraph 12 as well, that would be 24 good. 25 So this is in the background of</p>
<p>21 And then final paragraph, we see 22 starting near the bottom that we see a plurality 23 of different users can access the data via the 24 metadata from a corresponding plurality of</p>	
Page 1428	Page 1430
<p>1 different user workspaces. 2 So, again, we see it's littered 3 throughout this claim.</p>	<p>1 the invention in the provisional. And so what 2 they're talking about here is what existed at 3 the time of the filing of this provisional 4 application.</p>
<p>4 Q. And finally, is it also -- the 5 concept of metadata also in Claim 23? 6 A. Yes, it is. So, again, something 7 very similar. Let me just search for this. 8 Here -- it's somewhere in the 9 middle of the first paragraph. It says for 10 dynamically -- just a little bit below, for 11 dynamically storing the context data as metadata 12 on a storage component.</p>	<p>5 And here we see, the second line, 6 it says Current processes. So this is what 7 exists. Then designed to add context to files 8 such as the metadata tagging approach, involve 9 having a knowledge of user view files after they 10 have been stored and create metadata tags. 11 So here they're saying that at the 12 time of this filing, the one approach was to use 13 metadata where some person would manually assign 14 essentially this information to the file so they 15 can later search for it.</p>
<p>13 And a little bit right after that, 14 it says which metadata. It says that's 15 dynamically associated with data.</p>	<p>16 And then immediately following it, 17 it says -- it actually says, Well, this isn't 18 good enough. It says, Notwithstanding the 19 usefulness of the above-described methods, a 20 need still exists for a communications tool that 21 associates files generated by applications with 22 individual groups and topical context. 23 So really here they're talking 24 about metadata as here's what existed before.</p>
<p>16 And then in the second paragraph, 17 we have again near the bottom, it says 18 dynamically storing the change information on 19 the storage component as part of the metadata. 20 So again, it's throughout these claims. It's a 21 fundamental component of many of the elements of 22 these claims.</p>	
<p>23 Q. And what's the basis for your 24 opinion that these elements are not disclosed in</p>	

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1 They're talking about it as, Oh, it was done
 2 manually and we can do better than that.
 3 But that's it. That's the only
 4 use of the word metadata in this entire
 5 provisional is to say, Here's what's been done
 6 before.
 7 And it's wrong or it's not wrong,
 8 but it's not enough.
 9 Q. If the provisional doesn't
 10 describe metadata storage and updating, what
 11 does it describe?
 12 A. So I prepared a series of slides
 13 on power point to try to illustrate this. If we
 14 could bring that up. There we go.
 15 So the provisional application
 16 describes this idea -- describes here a lot of
 17 the ideas in it. So there is stuff in there.
 18 It's just not the stuff that's in the asserted
 19 claims.
 20 So the first thing it does, it
 21 describes these things called boards. And
 22 boards are essentially a collection of data and
 23 application functions.
 24 So these are things like, Well,

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1 you know, we have Microsoft Word and we have a
 2 document prepared with it. And it's all the
 3 stuff that -- essentially all the data and later
 4 applications, stuff that can happen on the
 5 board. So it's just a collection.
 6 It knows that there could be a
 7 word file, for example, with the document
 8 associated with it.
 9 The next thing it does, if you go
 10 to the next slide, is that -- and this is a
 11 quote from the provisional -- it says "the
 12 present invention automates workflow processes."
 13 The workflow is a sequence of
 14 steps. It's usually designed -- workflow is
 15 usually for office automation where it tries to
 16 automate some kind of procedure that documents
 17 will follow or that people have to follow.
 18 So for example, like, if you
 19 wanted to buy something, you filled out a form,
 20 and that form would go to this place first and
 21 that place next and that place next. It's a
 22 sequence of steps.
 23 Q. Dr. Greenberg, when you have your
 24 quotes up there, I wanted to help. If anyone

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1 wanted to follow, what is the paragraph number?
 2 What does that mean?
 3 A. That means this is an excerpt from
 4 paragraph twenty-two in the provisional
 5 application.
 6 The provisional application says
 7 we can relate these boards together in a
 8 sequence of steps, and the next thing the
 9 provisional says -- (this is a quote from page
 10 six, paragraph three. The numbering is a little
 11 different because the provisional looks like two
 12 different documents stuck together. The way the
 13 provisional numbers their paragraphs isn't
 14 consistent.
 15 It says the workflow process may
 16 be readily reorganized by making a change to one
 17 or more of the webs and boards. Imagine that.
 18 Somehow we've created a sequence, maybe
 19 manually, that there's a sequence or process
 20 that goes from board A to board B to board C and
 21 then D.
 22 We can shuffle around that
 23 sequence. The invention says we can change that
 24 sequence and reorganize those boards, so we can

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1 go from board B to board D to board A. All that
 2 stuff will be on those boards.
 3 Q. Why would someone want to do that?
 4 A. Workflow processes essentially, as
 5 I said, describe a sequence of steps, and these
 6 steps could change over time.
 7 One of the problems around -- I
 8 shouldn't say major problem. One of the issues
 9 that we wanted workflow systems to be, for
 10 example, so a site administrator could say,
 11 let's change the sequence of steps we're going
 12 to do things in without having to do a massive
 13 amount of rewrite of code.
 14 Essentially what this invention
 15 says, we can change the sequence of steps. I
 16 think we have a few more animations to show
 17 that.
 18 We could do this, and this is
 19 captured by this quote, and this is what's meant
 20 in the provisional. The user changes the
 21 context, the files, and applications
 22 automatically follow dynamically capturing those
 23 shifts in context, so this is automated.
 24 When they go from one board to the

<p style="text-align: center;">Page 1435</p> <p>1 next, these things will be in the right place. 2 This is not about tracking movements, capturing 3 contexts. It is about, here's the boards, 4 here's the relationships, and we keep juggling 5 those relationships and boards around to define 6 different sequences of steps and different 7 relationships. 8 Q. Say as a user changes their 9 context. Why doesn't that mean when a user goes 10 from board D to board C? 11 A. Here they are going from board D 12 to board C. This is an after-the-fact thing. 13 What the invention describes is we 14 can take the boards and change the 15 relationships. Here we're talk about a person 16 can go from one board to the next, and the stuff 17 will be there. There is no capturing of the 18 context of what the person is doing as they do 19 that, nor is there any tracking of the movements 20 nor updating of metadata. That is not in there. 21 Q. You mentioned there's two 22 documents pushed together to make up this 23 provisional application; is that right? 24 A. That's correct.</p>	<p style="text-align: center;">Page 1437</p> <p>1 boards are. 2 Q. Can you pull up the code, 3 Dr. Greenberg. Do you see the import statements 4 here? 5 A. Yes, I do. 6 Q. Are these in the provisional? 7 A. Yes, they are at the beginning of 8 the code section. 9 Q. What's the purpose of an import 10 statement? 11 A. So an import statement is, as the 12 name suggests, is a way for the computer program 13 to import code that's somewhere else, so 14 essentially it says it's a way for us to manage 15 code. It says that there's code somewhere else, 16 and I want to bring it into the program so the 17 program can actually use it. 18 Q. If we take the -- one of the first 19 ones, for example, the import com.leader.util. 20 What would that mean? 21 A. Not much because one thing that is 22 not in the provisional is what's in these 23 external files. All this tells me is that -- 24 and I'm just guessing now, so this is an</p>
<p style="text-align: center;">Page 1436</p> <p>1 Q. What are those two documents? 2 A. If I look at the provisional, so 3 there's one that looks like an -- essentially a 4 description, and it's -- they have paragraphs 5 numbers one through twenty-five and then there's 6 an attachment. It's labeled attachment two. 7 So I'm not sure. There's no 8 attachment one. I could see it just seems 9 something gathered from someplace else which 10 contained another description, and there's code 11 associated with it. 12 Q. Did you study that portion of 13 application as well? 14 A. Yes, I did. 15 Q. Does the code included in that 16 portion of the application change your opinion 17 regarding what's disclosed in that provisional 18 application? 19 A. No, if anything, it reenforces 20 what I found in the description. 21 The code is all about here's a 22 board and here's a relationship between boards, 23 and one is simply form filling essentially 24 manually what the relationships between the</p>	<p style="text-align: center;">Page 1438</p> <p>1 educated guess -- that because it starts with 2 com.leader, this is some code that Leader may 3 have or may not have written yet or may plan to 4 write that does some stuff. 5 Essentially it just says that 6 whatever is there is intrinsic to Leader, so I 7 would be guessing. It's like, we have this box, 8 and we have stuff in it, and the company 9 holds the box, but I won't tell you what's in 10 it. 11 Q. Can you determine in any way from 12 the import statements what the code looks like? 13 A. First, I have to say I don't know 14 if the code exists. I can't tell is this code 15 working code. Is it actually code that they've 16 actually compiled to run? I don't know. I 17 can't tell from this because that's not 18 complete. 19 The second thing I can tell is 20 this code or pseudocode is stuff intended to run 21 compiled by systems to be run eventually, or 22 it's more of a sketch. And looking at it, it 23 looks more like code. Again I don't know. 24 The third thing I can't tell is</p>

1 whether these files com.leader.util or debug,
2 whether they exist or not. I have no idea
3 whether these are just place holders or if they
4 have stuff there. It's not in the provisional.

5 If I look at any particular one of
6 them, I can make a guess. Com.leader.util,
7 maybe that means there's a utility program in
8 it, but there's another one called
9 asp.facebook.util, so I don't know what's in it.
10 I just make a wild guess.

11 Q. These are part of what's been
12 described as the code for this program?

13 A. Well, it's part of the code that
14 was produced in the provisional, but it's the
15 actual stuff in these things designated by the
16 import isn't there. They did not deliver that.

17 I've read other patent
18 applications, other things, before and sometimes
19 they come with a floppy or CD that says, here's
20 our stuff.

21 For one, this is all I have to
22 work with. I would be guessing.

23 Q. Can I direct your attention to a
24 particular part of the code attached here, the

1 have sub equal new concrete sub form create
2 relationship sub form. So that would probably
3 be the title of the window you would see as the
4 user and creator.

5 New relationship would be
6 instruction, and the rest of the code -- go a
7 little below it -- says sub.addboarddropdown.
8 It says sub.addboarddropdown, and following
9 that, it talks about the board drop down.

10 I think this is a drop down form
11 or guideline, something that you've probably
12 seen before on computer systems, but it brings
13 up this form that lets you set the relationship
14 of one board to another, and this is a manual
15 thing.

16 Q. Does anything in this disclose
17 tracking a user's movement from one board to
18 another board?

19 A. Neither is it in this code and
20 nowhere else in the code.

21 Q. Does anything in this code
22 disclose tracking a user's movement from one
23 context to a separate context?

24 A. No.

1 sixteenth page of the provisional. There should
2 be something called tool code. Tool code equals
3 get contact?

4 A. I think you want to see more than
5 that. The bottom one. Keep going right to the
6 bottom, to where it says return form.

7 Two more lines.

8 Q. And in here in particular, I'd
9 like to point your attention to the middle of
10 the page where it says action.addactionlistener.
11 Do you see that code?

12 A. I do.

13 Q. What does that code do?

14 A. So remember before I said that
15 what the provisional allows it to reset the
16 relationship between these boards. I believe in
17 looking at this and using my knowledge of
18 programming that what this essentially does is
19 really the user interface part for somebody to
20 manually set the relationship of one board to
21 another.

22 If I could highlight, it says the
23 fourth, fifth line down, add new relationship
24 subform. So it's using the word "form," and we

1 Q. There was a deposition taken in
2 this case of Mr. Lamb. Are you aware of that?

3 A. Yes, I am.

4 Q. Did you read Mr. Lamb's
5 deposition?

6 A. I did.

7 Q. Did you base your opinion on
8 Mr. Lamb's testimony in his deposition?

9 A. No, I did not.

10 Q. When you reviewed Mr. Lamb's
11 testimony about what he thought was in the
12 provisional application, did it change your
13 opinion as to whether or not the provisional
14 disclosed each and every element of the claim?

15 A. It enforced my position. He said
16 several times that no tracking was done in the
17 provisional application.

18 MR. ANDRE: I'm going to object to
19 the characterization of the witness's testimony,
20 and he testified to that.

21 THE COURT: Overruled. He's
22 testifying to his interpretation of that.

23 BY MS. KEEFE:

24 Q. Dr. Greenberg, one of the terms we