

Page 582	Page 584
<p>1 (Discussion off the record.)</p> <p>2 MR. ANDRE: I beg the Court's</p> <p>3 indulgence. My eyes are not as good as they</p> <p>4 used to be, and this font is very small.</p> <p>5 BY MR. ANDRE:</p> <p>6 Q. Dr. Vigna, if you turn to the</p> <p>7 second page of Exhibit 190, do you see a</p> <p>8 reference to context switching there?</p> <p>9 A. Yes. It's the fourth bullet from</p> <p>10 the top. It says context switching, photo</p> <p>11 browsing is either not easy/obvious or not</p> <p>12 possible.</p> <p>13 Q. That's a photo in the current</p> <p>14 state; is that correct?</p> <p>15 A. I think what they're referring to</p> <p>16 is they would like a system where they could</p> <p>17 easily access same photo from different context.</p> <p>18 Q. And if you look at the next</p> <p>19 paragraph below that where it says improvements</p> <p>20 that we want to make to mitigate the above?</p> <p>21 A. Yeah, it describes several ways in</p> <p>22 which they would improve the website so actually</p> <p>23 one can see a picture in different context. And</p> <p>24 I think that this will be more apparent when I</p>	<p>1 provided these documents to counsel and they</p> <p>2 didn't lodge an objection at the time. And the</p> <p>3 deposition testimony confirmed that context</p> <p>4 switching was implemented at Facebook.</p> <p>5 THE COURT: The objection is</p> <p>6 overruled. It's admitted.</p> <p>7 BY MR. ANDRE:</p> <p>8 Q. If you go to Exhibit 208, PTX 208.</p> <p>9 Dr. Vigna, is this another document from</p> <p>10 Facebook's confidential internal wiki?</p> <p>11 A. Correct.</p> <p>12 Q. And what is this document showing?</p> <p>13 A. It talks about how photos are</p> <p>14 actually stored. And it's called a storage</p> <p>15 architecture. And in a way, it really shows how</p> <p>16 there was a general concept of a storage</p> <p>17 component, and how things can be done, different</p> <p>18 things can be done in different ways under the</p> <p>19 hood. But the basic concept is how are we going</p> <p>20 to store all these pictures. We want something</p> <p>21 where I can put a picture and when I need it</p> <p>22 later I can pick it up in, for example,</p> <p>23 different sizes because of thumbnails and things</p> <p>24 like that.</p>
Page 583	Page 585
<p>1 describe how, for example, a picture of a user</p> <p>2 can be uploaded to a different album and these</p> <p>3 two different contexts can be accessed</p> <p>4 independently.</p> <p>5 Q. The fourth bullet point there that</p> <p>6 talks about every photo/video permalink page</p> <p>7 will have had all contexts in which the photo</p> <p>8 may be displayed, and a mechanism for switching</p> <p>9 to a new stream than the current context. Do</p> <p>10 you see that?</p> <p>11 A. Yes. In fact, I will later</p> <p>12 exemplify how I have actually a movie that shows</p> <p>13 you you can move from one context to another and</p> <p>14 show how the picture is related to both</p> <p>15 contexts.</p> <p>16 MR. ANDRE: Your Honor, I would</p> <p>17 like to move Exhibit PTX 190 into evidence.</p> <p>18 MS. KEEFFE: Actually I would</p> <p>19 object to this document, Your Honor. This was</p> <p>20 -- these are all forward looking statements and</p> <p>21 I believe the deposition testimony about them</p> <p>22 indicate that.</p> <p>23 THE COURT: Mr. Andre.</p> <p>24 MR. ANDRE: Your Honor, we</p>	<p>1 So, for example, the first line</p> <p>2 sort of like summed it up, and each photo</p> <p>3 uploaded by a user is stored on disk as several</p> <p>4 files of different sizes.</p> <p>5 And, you know, then they talk</p> <p>6 about they're grouped logically into volumes,</p> <p>7 which are the basic unit of backend storage.</p> <p>8 And then all the stuff -- actually, can you pull</p> <p>9 it up, I don't care about the stuff below</p> <p>10 particularly, I mean, we can discuss it, but</p> <p>11 it's not very interesting.</p> <p>12 Another example is a content</p> <p>13 distribution network below that shows that these</p> <p>14 images are cached using a technique that makes</p> <p>15 it easier for people to access these pictures in</p> <p>16 a way there is closer to themselves, so that</p> <p>17 they optimize the way in which things are</p> <p>18 retrieve from the storage component.</p> <p>19 It is a very sophisticated largely</p> <p>20 distributed system whose overall goal is</p> <p>21 storage. So there are all these different ways,</p> <p>22 as we will see there is cache in memory, there</p> <p>23 is the storage architecture, the file system,</p> <p>24 the contribution system network, the volumes,</p>

1 all this is a technical detail to implement a  
 2 basic concept, that is I want to put something  
 3 in storage and I want to go be able to get it  
 4 out whenever I want.  
 5 Of course when you talk about  
 6 billions of pictures, it's not going to be  
 7 simple. You know, in a way, it's like when you  
 8 want to store stuff in a storage place at a  
 9 storage unit, you would put in the front of the  
 10 unit the things that you use the most. You  
 11 don't want to put, you know, I don't know, your  
 12 favorite piece of luggage at the end of the  
 13 storage place under your car tires. You want to  
 14 have it in front of the doors so you can just  
 15 pick it. This is the same idea. The overall  
 16 storage component is the storage room, is a  
 17 place where you can put stuff and you can take  
 18 it out. Of course you organize it in different  
 19 ways so the stuff that you need the most, you  
 20 need the more frequently, you can access more  
 21 easily.  
 22 MR. ANDRE: Your Honor, may I  
 23 approach the witness and put back up my board?  
 24 THE COURT: You may. Do you

1 anticipate putting it up for long? I'm only  
 2 worried for Ms. Keefe if she needs to pull a  
 3 chair over.  
 4 MS. KEEFE: I think I'll be okay,  
 5 Your Honor.  
 6 THE COURT: Okay.  
 7 MS. KEEFE: Thank you.  
 8 BY MR. ANDRE:  
 9 Q. Dr. Vigna, we have looked at the  
 10 source code, we have looked at a demonstrative  
 11 of you showing how the website works with your  
 12 interceptor program, the confidential internal  
 13 wiki and the public documents that Facebook  
 14 provided. Did you rely on any deposition  
 15 testimony for forming your opinion?  
 16 A. Yes. I also looked at deposition  
 17 testimony that shows that, for example,  
 18 describes how photos are uploaded and stored,  
 19 and context captured.  
 20 Q. And based on all that you've  
 21 reviewed here today, do you have an opinion as  
 22 to whether or not the Facebook website infringes  
 23 the context component claim element of Claim 1?  
 24 A. Yes, I have an opinion.

1 Q. And what is your opinion?  
 2 A. Well, the opinion is that Facebook  
 3 infringes that particular element because it  
 4 contains a context component that has the  
 5 quality described there and contains also a  
 6 storage component where that particular data  
 7 described there, context information is stored  
 8 as metadata.  
 9 Q. And would you mind taking one of  
 10 those markers and putting a check in the box to  
 11 indicate that you have formed that opinion?  
 12 A. No problem. If I don't kill  
 13 myself getting in and out.  
 14 Q. Tied up there with cables?  
 15 A. Yeah.  
 16 Q. Let's turn to the second element  
 17 of Claim 1, the tracking component.  
 18 A. Okay.  
 19 Q. Can you describe what is a  
 20 tracking component with regard to Claim 1 of the  
 21 '761 patent?  
 22 A. So, the Claim 1 describes a  
 23 computer implemented tracking component of the  
 24 network-based system for tracking a change of

1 the user from the first context to a second  
 2 context of the network-based system and  
 3 dynamically updating the stored metadata based  
 4 on the change, wherein the user accesses the  
 5 data from the second context.  
 6 Q. Can you show the jury how this  
 7 works using the flip pad and the markers that  
 8 are up there, please?  
 9 A. Yes. Let me see if I can do it in  
 10 a way to show the jury without having to get a  
 11 neck pain.  
 12 So the main idea is the following.  
 13 MS. KEEFE: Your Honor, can I.  
 14 THE COURT: Feel free to move if  
 15 you need to, Ms. Keefe.  
 16 THE WITNESS: I will, also.  
 17 THE COURT: I'm most concerned  
 18 that the jury can see it.  
 19 THE WITNESS: Okay. Can you see  
 20 this? So.  
 21 The basic idea is that, you know,  
 22 we have a user and the user is sort of some data  
 23 that want to -- that the user wants to share in  
 24 this, you know, Facebook application.

1 So the main idea is that the user  
2 is within a context, and this context is, for  
3 example, his profile page, and he's uploading  
4 his new or her new profile page. And this  
5 information, so the data, plus context  
6 information as we have just seen is captured by  
7 this, you know, context component.

8 Okay. And this context component  
9 captures the data itself so the raw picture,  
10 additional information, and stores it, stores  
11 the context information as metadata in something  
12 that is managed by a storage component. And we  
13 saw what the storage component does and, you  
14 know, it's a very simple idea. You put  
15 something there, you get it back. But there is  
16 metadata, so there is context information right  
17 here.

18 But the cool idea of the patent  
19 that is also in Facebook is that there is also a  
20 tracking component. And what does this tracking  
21 component do? The tracking component checks  
22 different things, makes sure that, you know,  
23 checks who you are when you go to the website,  
24 so it identifies who you are, because actions

1 performed by me will have a different effect  
2 than action performed by Paul or by other  
3 people.

4 And where you are, so where you  
5 are in the website, a little different context  
6 or environments in which you can interact with  
7 the application. And also what you do.

8 So again, this is a high level  
9 component whose main task is to track what you  
10 do with the website. And this is a very  
11 important thing in collaboration tools because  
12 the whole point is I want to know in a  
13 collaboration if somebody took an action,  
14 somebody modified some data, performed certain  
15 operation on the website.

16 And so I want this tracking  
17 component to be able to tell me who is doing  
18 what to what when. Okay? The important stuff  
19 that I'm interested in.

20 And, of course, this information  
21 is also stored in the metadata as tracking  
22 information. So this is stuff that tells you,  
23 you know, that you are modifying the data, so  
24 you're performing actions on the website, on the

1 application, and this is data that I want to be  
2 able to access.

3 And so this is both the context  
4 information captured by the storing component  
5 and the tracking information captured by the  
6 tracking component are stored as metadata by the  
7 storage component.

8 And we will see now how this  
9 tracking, also similar to the storage component  
10 where we saw that one single functionality,  
11 storing something was actually a composition of  
12 different mechanisms, we will see also that the  
13 tracking component that is used to track people  
14 is done using different mechanisms that when  
15 come together provide the tracking functionality  
16 that is implemented by Facebook.

17 Q. And is it your opinion that --  
18 strike that.

19 Does Facebook contain a tracking  
20 component in your opinion?

21 A. Yes, it's my opinion that it does.

22 Q. Could you show us one using your  
23 interceptor program, how that occurs?

24 A. Yes.

1 So, for example, in -- I will for  
2 example, use this. So before I do this. So in  
3 this particular case, what happens is you see  
4 here I just click -- sorry, let me -- okay.  
5 Sorry.

6 In this particular case, I'm on my  
7 profile page and you can see here at the bottom  
8 I am going to go and visit Mary Smith. Okay?

9 Now --

10 Q. I'm sorry to interrupt. I have  
11 been hearing this term in this case, and I'm not  
12 sure, what's a wall on Facebook?

13 A. Let me explain in a second because  
14 I think I want to give you another piece of  
15 background.

16 So, you know, there is this  
17 context. What the tracking component does is  
18 you're going to move from one context to a  
19 different context. Okay? So the tracking  
20 component will track the fact that a user moved  
21 from one context to another. So that's the goal  
22 of this tracking component, you were, for  
23 example, watching your profile or your wall and  
24 suddenly you're watching the profile or the wall

1 of another person.  
 2 Now the wall, the wall is just --  
 3 it's a name. It's a component used by Facebook  
 4 so that people can write on your wall and send  
 5 you fundamentally a message that can be seen by  
 6 many people. So if I have a friend and I can go  
 7 to their wall and say, you know, oh, I just saw  
 8 you at the concert, wasn't that concert great,  
 9 everybody sees that message because I wrote it  
 10 on her wall. Actually not everybody, there are,  
 11 of course, privacy settings that determines who  
 12 exactly sees the message. But I think you get  
 13 the concept.

14 So there is tracking, so as you  
 15 will see, when you move from one to another, you  
 16 perform certain actions and since you changed  
 17 based on the fact that you are in a context that  
 18 it's different, your actions will generate  
 19 metadata that will get and update the metadata  
 20 and at the same time for this action, there will  
 21 be some data that has been uploaded in this  
 22 context that's going to be also fetched and  
 23 accessed in this second context.

24 This is all very abstract, but I'm

1 And this value here, okay,  
 2 uniquely identifies that particular user. So  
 3 every time a Facebook, a request is made to  
 4 Facebook, this particular piece of data is sent  
 5 to Facebook to say, by the way, this request  
 6 here, here who I am, and I am user John  
 7 Vineyard. So Facebook can track for every  
 8 request who you are.

9 So in a way it's like sending with  
 10 every phone call your caller ID. So instead of  
 11 being anonymous, every time you make this phone  
 12 call to Facebook asking for something, saying by  
 13 the way, I'm John Vineyard.

14 You don't see any of this because  
 15 it happens under the hood, but in every request  
 16 there is this value that is used to identify the  
 17 user and to track how the user moves across a  
 18 website.

19 So we're going to send this  
 20 request further. You see.

21 And here we are in the wall of  
 22 Mary Smith. And what you see up here is  
 23 something.

24 You know, it's like a piece of

1 going to show you it's very simple when you see  
 2 it in practice.

3 Q. Does the wall also show recent  
 4 activity of a user?

5 A. Absolutely. As we will see, there  
 6 are different components again to the tracking,  
 7 there is something called the Mini-feed,  
 8 something called Multi-feed, the news feed, and  
 9 these can be seen in different ways. And I will  
 10 show you some, but I'm sure that you will  
 11 immediately get the basic idea behind it.

12 So if you go back here and we go  
 13 on, here you can see that I click on the image  
 14 of my friend. And as a result, there is a  
 15 request that is performed where -- where we are  
 16 now under parameters.

17 And again, you can see again there  
 18 is the ID of the user. First thing that I show  
 19 you up here is the ID of the user that I want to  
 20 go to the profile of.

21 But also you see this cookie that  
 22 I mentioned before a little bit. This cookie is  
 23 actually included in every request that a  
 24 particular user performs to Facebook.

1 this particular context in which I can write  
 2 something and I can publish on the wall of this  
 3 user.

4 So when I go there, I -- you know,  
 5 what do you want to cook tonight? Since it's  
 6 4:00 p.m., let's make food related.

7 And you can see that as I press  
 8 share, there is another request that is  
 9 performed in this case to ajax/updatestatus.php  
 10 okay.

11 And this request, as you can see,  
 12 has a number of parameters. It includes, for  
 13 example, the type of action, profile update, the  
 14 profile ID, the actual content that is provided  
 15 by the user.

16 The target ID. The display  
 17 context, which is profile.

18 And all this information is sent  
 19 to the user. As a result, you can see that here  
 20 a message is created and that message has my  
 21 image with John Vineyard's image, which happens  
 22 to be mine and the information that I just put  
 23 into this particular thing.

24 Okay. So this image that I

<p style="text-align: right;">Page 598</p> <p>1 uploaded in my first context in the profile, 2 remember that I updated my image. I had a 3 different image before. 4 This is the new image that I just 5 uploaded in my first context. Now, I am in my 6 second context and this information is fetched. 7 Okay. 8 At the same time if now I go in 9 and I look at what this image is -- oops, sorry. 10 Let me get out of the way. 11 Here this is unfortunate because 12 it's -- I'm starting here. Sorry. 13 But what I just did, let me go 14 back. This is not -- I apologize. This is not 15 very clear. 16 So what I did here, I used another 17 tool. I told you that I would use two tools. 18 One is the one that catches 19 requests as they go by. The second tool is a 20 tool that allows me to inspect when -- you know, 21 when you look at this page, it's all pretty. It 22 has pictures and text. 23 But actually the code -- even 24 though this is considered code, there is a lot</p>	<p style="text-align: right;">Page 600</p> <p>1 Mary Smith's page the second context? 2 A. Correct. And now you can see 3 that, you know, I close this window. I go back 4 to my profile. 5 And when I go there and you can 6 see that something appeared in my own wall, and 7 there was something to say John wrote in Mary 8 Smith's wall. What this means actually that 9 somebody tracked me, that I went to Mary Smith. 10 Identify that I did something 11 there, created some kind of tracking metadata, 12 which is now showing up in my wall. 13 Okay. So it is obviously -- it is 14 obvious from this point of view that there is a 15 tracking component that is identifying what I'm 16 doing and who I am. 17 Q. And -- 18 A. I think that -- 19 Q. I think we probably have time for 20 this, but can you show me in the source code as 21 well as how it's -- 22 A. Yeah. 23 Q. -- evidenced in the code from 24 Facebook?</p>
<p style="text-align: right;">Page 599</p> <p>1 of stuff in the background that happens so that 2 this image can be displayed. So you see that 3 down here I have this inspect element. 4 This is a tool called fire bug 5 that I use to see what really is going on in 6 that particular element, which is my little 7 picture. And so the code that you will see here 8 shows that as part of the showing this page, 9 you'll see -- oh, God, this is actually not very 10 good. 11 But you can see that this 12 particular -- I would like to stop it, but -- 13 can I remove this? Oh, yeah. Oh. 14 Much better. I am sorry. 15 So you can see that -- you see 16 this URL, is actually a way to fetch exactly this 17 information that was uploaded in the first 18 context. So what the data that you see here, 19 that is not very pretty to look at, it actually 20 renders -- ends up being displayed this way. 21 And as part of displaying this, 22 you can see that there is the requesting all the 23 information loaded in the first context. 24 Q. So in that particular instance is</p>	<p style="text-align: right;">Page 601</p> <p>1 A. Yes. So one example -- so if you 2 remember, one request that I was performing here 3 is when I was writing on the wall, it was -- 4 this is -- oops. 5 Yeah. I'm looking at my screen 6 that you cannot see. But you see that top line 7 there says post/ajax/updatestatus.php. 8 And so I can go to a source code 9 and, of course, load into my editor the 10 ajax/updatestatus.php. 11 As you can see, this is yet 12 another incredibly non-descriptive piece of 13 code. But the important thing -- the important 14 thing here is that at certain point, this 15 particular file calls the function at wall post 16 that is defined in lib/wall.php. 17 So I'm going to load now another 18 piece of code called lib/wall.php. 19 This is called add wall post. And 20 you can see this is the function. Okay. 21 And right here after awhile it 22 does a number of operations. And you can see 23 here where the cursor is here, something that at 24 this point you will recognize as sequel codes,</p>

Page 602	Page 604
<p>1 the other form of source code that says insert 2 into the wall object. 3       Okay. A number of information is 4 to, from, the text, the time, action, the 5 application ID, a number of information into the 6 wall database. So this information is stored. 7       After this happens, okay, there is 8 also the creation of metadata in the form of 9 this tracking information. And here I'll show 10 you, this ends up calling another function that 11 is defined in the user action file, which is in 12 F lib/user action/base -- sorry. I'm using 13 this -- okay. 14       So, for example, here it says, you 15 know, at the very beginning it said feed-worthy. 16 feed-worthy. 17       And we will see what -- you know, 18 feed is, you know, the information that people 19 want to know about what you're doing on the side 20 pretty much. Like adding previous and current -- 21 require multiple function calls to Mini Feed and 22 Falcon. These are other tracking components. 23       But pretty much what here it says 24 is that you have to call this method publish on</p>	<p>1 dynamically updated, okay, right here in the 2 form of tracking information. And when this 3 happens, also data that was created in the first 4 context, my profile picture is dragged into the 5 second context and accessed there. 6       Okay. And because of these -- all 7 these elements being there, there is 8 infringement for the element. 9       Q. And the example that you just 10 showed was writing on someone's wall. Could you 11 show us in the few minutes we've got left here 12 just one more example of joining pages using 13 your interceptor. 14       Q. And before you start that, what is 15 a page in Facebook? 16       A. So a page in this particular case 17 is -- it's sort of like a way to promote, for 18 example, a business, an idea, or a group. Okay. 19       So a page can be, for example, the 20 page for some football team that I am not a big 21 football fan. So probably the -- I don't know 22 -- the Giants; correct, for football? 23       Q. New York Giants? 24       A. New York Giants.</p>
<p>Page 603</p> <p>1 some kind of action you perform. And this will 2 create a record that action has been performed. 3       So if we follow the code, we will 4 see that this published method is actually 5 invoked. And actually if we look at another 6 source code component, and I'm actually 7 simplifying this because there are a number of 8 functions that are called one after another, 9 which is not -- but this is feed 10 suspect/stories/add/insert.php. 11       And for example, what we see here 12 is -- let's see if I can find it. 13       Yeah. Look at this. 14       I think now that you are possibly 15 experts in sequel. But you can see there is 16 another sequel to say enter into Mini Feed 17 stories. 18       And here there is the tracking 19 information, a story that is storing part of the 20 tracking information, which is the Mini Feed 21 that says that this particular user performed a 22 certain action on the website. 23       So we have a user to move from one 24 context to another. We have metadata being</p>	<p>Page 605</p> <p>1       So they will have a page of 2 Facebook and people can be fans of the Giants. 3       Q. Philadelphia Eagles might be 4 better here. 5       A. I will really -- I confuse 6 baseball with football, so I'm -- don't hold me 7 accountable for that stuff. 8       Okay. So I will show you, for 9 example, that an example of fanning a page. So 10 becoming a fan of a page. 11       Q. Would you switch your computer? 12       A. Yeah. 13       Q. The screen? Thank you. 14       A. So, for example, this particular 15 case, I'm on my page and I look for pages that I 16 might be interested in. For example, real 17 Italian pizza. 18       Okay. I'm really into real 19 Italian pizza. 20       So I like it. The moment I click 21 on that like it, again, a request is made to the 22 website. In this particular case, it's 23 something called post for the resource 24 ajax/pages/fanstatus.php. Okay.</p>

1 And as you will see in a screenshot,  
2 if you look at the parameters, again, we have  
3 the idea of the page, but also the omnipresent  
4 cookie C\_user that is highlighted right there  
5 that tracks the fact that I am the user who said  
6 I want -- I moved to this page context and I say  
7 I like it.

8 And when this happens, of course,  
9 I have to put, for security, some control words  
10 that are very, in this recession times, happens  
11 to be pay lowers. I submit this information.

12 And as a result, a request is made  
13 to post ajax/page/taustatus.php with similar  
14 parameters. The page ID, the user in the form  
15 of a cookie. And when this is forwarded, you  
16 can see that in this case, it is second context.

17 My picture here appears, so data  
18 that was created in the first context is  
19 actually tagged and used in the second context,  
20 which is the real Italian pizza page.

21 And if I look again using the  
22 bug, you will see -- oops. You will see again  
23 that this is information that is stored on the  
24 Facebook content distribution network as a JPEG.

1 This -- so this is information that I uploaded  
2 that is there mentioned on the web page.

3 And when I go back to my home, you  
4 can see that is -- I have become in this story  
5 the -- well, I have become an Italian food  
6 lover.

7 And you can see here that I've  
8 been tracked. My action has been recorded,  
9 stored into metadata and is presented -- sorry,  
10 fade too fast. And is presented here.

11 John likes real Italian pizza. So  
12 the fact that I joined that page, not only has  
13 created that page image with my profile image  
14 that was created, the first context. So we have  
15 first context, my profile.

16 I upload my profile picture. Move  
17 from the fan page. I perform an action.

18 And we have my picture after that  
19 in the second context. And in addition, we have  
20 a generation of metadata in the form of tracking  
21 information that is then appearing back here.

22 MR. ANDRE: Your Honor, this is  
23 probably a good stopping point. I'd ask your  
24 permission to go remove my board so the jury can

1 escape that of here.

2 THE COURT: I think we would all,  
3 including the jury, appreciate that.

4 THE COURT: While Mr. Andre  
5 returns, I'll remind our jurors that you are  
6 still not to talk about the case with anyone,  
7 don't be getting into any deliberations. If  
8 there is any media coverage of this case, don't  
9 look at it.

10 Have a good night and be back here  
11 in time to start up at nine o'clock.

12 THE CLERK: All rise.

13 (Jury entering the courtroom at  
14 4:25 p.m.)

15 THE COURT: Dr. Vigna, you can  
16 certainly step down carefully.

17 Counsel, I have a criminal matter  
18 to attend to in about five minutes, but I did  
19 just want to discuss -- you can all sit down, by  
20 the way. Just get a sense of where we are time  
21 wise, what we anticipate to happen tomorrow in  
22 particular.

23 MR. ANDRE: Your Honor, we'll be  
24 closing our case tomorrow with Dr. Vigna's

1 conclusion of his testimony. It will be a  
2 couple more hours, I imagine.

3 THE COURT: A couple more hours on  
4 direct?

5 MR. ANDRE: Yes. So I'm hoping we  
6 will have it closed by -- him off the stand by  
7 lunch or shortly thereafter.

8 THE COURT: There is  
9 cross-examination.

10 MR. ANDRE: That's true. I figure  
11 it takes about five minutes.

12 THE COURT: Doubtful. Okay.

13 MS. KEEFE: You never know.

14 THE COURT: You never know. And  
15 assuming we get to Facebook's case, you will be  
16 starting with Mr. Cox.

17 MR. RHODES: Yes, Your Honor.  
18 Then it's Bosworth and the engineers, I think we  
19 have video of Lamb and Keanis, just remembered  
20 that we have video of Mr. McKibben, call  
21 Mr. McKibben live, and it's Greenberg.

22 THE COURT: So it doesn't sound at  
23 all possible to get to Mr. Greenberg tomorrow;  
24 correct?

1 MR. RHODES: I think that would be  
 2 optimistic.  
 3 THE COURT: Okay.  
 4 MR. RHODES: Your Honor, may I  
 5 have a word with you. We don't need to be on  
 6 the record, but at a side-bar with Mr. Andre.  
 7 THE COURT: Sure, but I'm going to  
 8 bring the court reporter over.  
 9 (Side-bar discussion:)  
 10 MR. RHODES: I found out that  
 11 there is going to be some kind of a TV special  
 12 tomorrow.  
 13 THE COURT: Why are you  
 14 whispering? We can keep this portion of the  
 15 transcript under seal.  
 16 MR. RHODES: I found out that  
 17 there is going to be some kind of TV coverage, I  
 18 think it's going to be on Diane Sawyer's, she's  
 19 got a nightly news program. I think she's going  
 20 to be broadcasting tomorrow night from Facebook  
 21 to deal with this certain milestone they reached  
 22 with certain users. I thought Paul had a pretty  
 23 good point last week to tell somebody not to  
 24 look at something, maybe they will. I want you

1 State of Delaware )  
 )  
 2 New Castle County )  
 3  
 4

CERTIFICATE OF REPORTER

5  
 6  
 7 I, Heather M. Triozzi, Registered  
 8 Professional Reporter, Certified Shorthand Reporter,  
 9 and Notary Public, do hereby certify that the  
 10 foregoing record, Pages 309 to 612 inclusive, is a  
 11 true and accurate transcript of my stenographic notes  
 12 taken on July 20, 2010, in the above-captioned  
 13 matter.  
 14

15 IN WITNESS WHEREOF, I have hereunto set my  
 16 hand and seal this 20th day of July, 2010, at  
 17 Wilmington.

21 Heather M. Triozzi, RPR, CSR

1 to know tonight, I just give you the information  
 2 for whatever reason you might need it.  
 3 THE COURT: At this point you're  
 4 not making a request that I instruct the jury in  
 5 any way about it?  
 6 MR. RHODES: No, I just wanted to  
 7 share that with you.  
 8 THE COURT: Any comment,  
 9 Mr. Andre?  
 10 MR. ANDRE: I have no comment.  
 11 Congratulations to Facebook.  
 12 THE COURT: Thank you for advising  
 13 us of it.  
 14 (End of side-bar conference.)  
 15 THE COURT: We'll be in recess and  
 16 I'll see you in the morning.  
 17 (Court recessed at 4:29 p.m.)  
 18  
 19  
 20  
 21  
 22  
 23  
 24



IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

LEADER TECHNOLOGIES, INC.,	)	Trial Volume 3
	)	
	)	
Plaintiff,	)	
	)	C.A. No. 08-862-JJF-LPS
v.	)	
	)	
FACEBOOK, INC., a Delaware corporation,	)	
	)	
Defendant.	)	

July 21, 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 KOBIALKA, ESQ.  
BY: JAMES HANNAH, ESQ.

Counsel for Plaintiff  
Hawkins Reporting Service  
715 North King Street - Wilmington, Delaware 19801  
(302) 658-6697 FAX (302) 658-8418

Page 614

1 APPEARANCES CONTINUED:  
 2  
 3  
 4 BLANK ROME, LLP  
 BY: STEVEN L. CAPONI, ESQ.  
 5  
 and-  
 6  
 COOLEY, GODWARD, KRONISH, LLP  
 BY: MICHAEL RHODES, ESQ.  
 BY: HEIDI L. KEEFE, ESQ.  
 BY: JEFFREY NORBERG, ESQ.  
 Counsel for Defendant  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24

Page 615

1 THE CLERK: All rise.  
 2 THE COURT: Good morning,  
 3 everybody.  
 4 (Everyone said, Good morning.)  
 5 THE CLERK: Be seated.  
 6 THE COURT: I thought we could try  
 7 to use these few things before I bring the jury  
 8 in. I'm wondering if we might be able to  
 9 anticipate any of the issues that may, if any,  
 10 come up in the remaining of Dr. Vigna's direct,  
 11 and see if we can deal with them now and smoothly  
 12 along the rest of the presentation.  
 13 Mr. Andre or Ms. Keefe, any ideas  
 14 here?  
 15 MR. ANDRE: Your Honor, I don't  
 16 know where the catch would be. I don't know if  
 17 there's going to be anymore objections to the  
 18 demonstratives he's using and the exhibits.  
 19 So I think it will just be Dr.  
 20 Vigna, you know, marking his way through. It's  
 21 logistically a little bit difficult to get it  
 22 done quickly.  
 23 I'm working through it.  
 24 THE COURT: I'm less concerned

Page 616

1 with the speed than just the interruption, if  
 2 there are things I might be able to handle  
 3 before we bring the jury in.  
 4 MS. KEEFE: I think I made my  
 5 record at this point clearly. The only other  
 6 thing I would do is insert an objection when the  
 7 first viewing of the collaborative API comes up.  
 8 But if Your Honor prefers, I can sit on the  
 9 record that I've already made that we object to  
 10 anything that's new.  
 11 THE COURT: Yeah.  
 12 MR. ANDRE: Just to make life  
 13 easy, we've decided not to use the second  
 14 demonstrative, the collaborative.  
 15 THE COURT: Okay.  
 16 MS. KEEFE: That's very helpful.  
 17 MR. ANDRE: It's something, Your  
 18 Honor's admonition, that we aimed on the side of  
 19 caution. We think that Dr. Vigna's testimony is  
 20 persuasive enough the way it is. So we will not  
 21 be using that demonstrative exhibit.  
 22 MS. KEEFE: I don't anticipate any  
 23 problems. If something comes up that's a  
 24 standard objection, I will still have to make

Page 617

1 it. But nothing as to the demonstratives.  
 2 THE COURT: Right. With respect  
 3 to the demonstratives, I think I was thrown a  
 4 little bit because you did have an objection to  
 5 one of the -- this isn't the demonstratives.  
 6 Excuse me.  
 7 In the binder when we put the  
 8 binder in front of the jury, I had understood  
 9 there weren't going to be any objections to the  
 10 documents and there was the one that had to do  
 11 with perspective language, I think.  
 12 MS. KEEFE: Yeah. I think in that  
 13 one. There were no others.  
 14 And in that one, it was because  
 15 he's relying on a document that has  
 16 forward-looking language to indicate that it  
 17 exists, and that it's something that Facebook  
 18 actually is doing. The testimony in the  
 19 depositions was that Mulligan does not happen.  
 20 It's not a program that's being  
 21 run by Facebook right now. And I think there's  
 22 potentially some confusion about that.  
 23 MR. ANDRE: We, obviously, contest  
 24 that testimony. We have the testimony. It says

1 that Mulligan is running and any ways --  
 2 THE COURT: Right. I'm less  
 3 concerned with the substance at the moment than  
 4 just the procedure of if you have that  
 5 objection, to that document, we should have  
 6 talked about that before we put the binder in.  
 7 MS. KEEFE: Well, I apologize. I  
 8 think that I couldn't know how they were going  
 9 to use it.  
 10 If there was some other purpose  
 11 for the document, it may not have been  
 12 objectionable. So I do apologize that I didn't  
 13 anticipate that potential objection.  
 14 THE COURT: Understood. Okay.  
 15 And you expect we have a couple  
 16 more hours possibly of the direct?  
 17 MR. ANDRE: At least. I think  
 18 we're still on Claim 1. So we've got -- we'll  
 19 get through the later claims a little faster,  
 20 obviously.  
 21 THE COURT: And is he going to be  
 22 using the source code more this morning?  
 23 MR. ANDRE: He will be using the  
 24 source code this morning. That's correct.

1 THE COURT: And is that segerable  
 2 or is it going to come and go?  
 3 MR. ANDRE: It's going to come and  
 4 go, to some degree, just because of the nature  
 5 of the claims and the way we're walking through  
 6 the evidence. We're starting off with source  
 7 code this morning, so it will come and go to  
 8 some degree.  
 9 I can -- I apologize if I didn't  
 10 say this yesterday with the court reporter --  
 11 let you know when we get off the source code and  
 12 when we get back on. We can probably fix that  
 13 after we get the final transcripts and such.  
 14 THE COURT: Okay. That's fine.  
 15 All right. Anything else that you  
 16 wanted to raise before we bring the jury in?  
 17 MR. ANDRE: We have some  
 18 objections to demonstratives that was provided  
 19 to us last night.  
 20 THE COURT: Okay.  
 21 MR. ANDRE: With respect to the  
 22 demonstratives, for the expert witness, we are  
 23 objecting that it is outside the scope of his  
 24 expert report and contrary to his testimony in

1 the case.  
 2 Now, I just want to make the  
 3 objection for the record. I know Your Honor has  
 4 the admonition that they do so at their own  
 5 risk. We just want to put that on the record.  
 6 THE COURT: Okay.  
 7 MR. ANDRE: The second and more  
 8 problematic set of demonstratives are with their  
 9 first fact witness, Mr. Cox. As Your Honor  
 10 knows, back at the pretrial conference, we  
 11 raised the issue that we believe that you're  
 12 going to try to use their fact witnesses as  
 13 experts and we raised it again during trial when  
 14 they indicated Mr. Cox would be looking at  
 15 source code which we checked out the source  
 16 code, he didn't author any of the source code.  
 17 They confirmed to me this morning  
 18 that Mr. Cox is not going to be using source  
 19 code, so that's -- so that's a moot issue at  
 20 this point, I believe, based on Ms. Keefe's  
 21 representation that he would not be using source  
 22 code.  
 23 But we did get a set of  
 24 demonstratives they intend to use with Mr. Cox,

1 and they are clearly inappropriate. They are  
 2 not accurate representations of Facebook's  
 3 website. I don't think they can authenticate  
 4 them. And more importantly, they are identical,  
 5 nearly identical, just different pictures, this  
 6 is what they were using with their expert in  
 7 their opening. This is what they were using  
 8 with Mr. Cox. They're almost identical  
 9 demonstratives, so there is no way that they can  
 10 use these types of demonstratives with an expert  
 11 and a fact witness with him giving the same  
 12 opinion.  
 13 On our meet and confer, Ms. Keefe  
 14 said he's going to give his understanding of how  
 15 the Facebook website works. I was on Facebook's  
 16 website. Why I don't see this? It's not there.  
 17 This is a cartoon depiction that's not accurate.  
 18 The only way he can say it's accurate is if he  
 19 gives an opinion, so they're trying to bring in  
 20 this opinion testimony through a fact witness.  
 21 And probably a little more  
 22 problematic is this is a continuing theme in  
 23 this case so far of having this kind of a double  
 24 standard. Yesterday we had an objection of

<p style="text-align: center;">Page 622</p> <p>1 Mr. McKibben showing a photograph of his team,  2 ceen though they weren't lodged yesterday  3 morning. And those photographs were produced in  4 the course of discovery.  5 It just seems to me that these  6 type of demonstratives are clearly  7 inappropriate. So that's our objection, Your  8 Honor.  9 THE COURT: Okay. Let me hear  10 from Facebook, please.  11 MR. RHOADES: Well, that's a  12 remarkable statement given we are listening to  13 an expert with an entirely new report and  14 entirely new demonstrative that we never saw  15 before.  16 The fact of the matter is what he  17 said was untrue. Mr. Cox was the twelfth  18 engineer of the company. He was the fortieth  19 employee of the company. He wrote most of the  20 source code and he will so testify under oath  21 today.  22 He is here to establish what  23 Facebook does. The Facebook system is the  24 accused product. We are allowed to put on</p>	<p style="text-align: center;">Page 624</p> <p>1 vice-president of product, and product is the  2 website.  3 THE COURT: So he's not going to  4 talk about source code, but he is going to give  5 in your view a factual recitation of how the  6 website works?  7 MR. RHOADES: Precisely, how the  8 accused device works. He was one of the  9 principal architects of the system, wrote most  10 of the code, oversaw many of the engineers'  11 projects and he's going to say if you do this in  12 the system what happens at the back end is this.  13 THE COURT: To the extent  14 Mr. Andre thinks what he's going to say and what  15 the demonstrative show is not an accurate  16 representation of the website, he's free to  17 examine that on cross-examination.  18 MR. RHOADES: Of course. And more  19 fundamentally, Your Honor, if you think about  20 it, a layperson can express opinion about  21 matters as to which they're fully informed.  22 Moreover under 701 if we were doing a car wreck  23 case and I said to the precipitant witness can  24 you go up to the board and draw us what you saw</p>
<p style="text-align: center;">Page 623</p> <p>1 engineers to say how does the accused product  2 work. If Mr. Andre wants to cross-examine him  3 and try to convince the jury that what we just  4 had him say on direct should not be believed  5 because he lacks personal knowledge, that's  6 fine.  7 The exhibits in controversy are  8 essentially the ones that have been in front of  9 the jury now two or three times. He is going to  10 explain that when you do some action, what does  11 the system do. That's entirely appropriate.  12 And this is just another example  13 of trying to tie my hands and stand here and say  14 I have to listen to expert testimony I have  15 never heard before, never seen and can't put on  16 a defense. And fundamentally they didn't follow  17 the procedure. They sent these over two nights  18 ago, no objection. We got the objection last  19 night.  20 Look, procedures, I will confess,  21 I have been somewhat confused about procedures  22 and we have had our issues on our side of the  23 table, but, you know, this is a guy who is  24 responsible for the product. His title is</p>	<p style="text-align: center;">Page 625</p> <p>1 and what happened, they could do that.  2 This demonstrative is simply the  3 same demonstrative the parties have been using  4 to illustrate the three use cases in the case,  5 and what happens when you do those use cases.  6 This is not expert opinion. He just does not  7 want the jury to hear it.  8 THE COURT: Mr. Andre, briefly.  9 MR. ANDRE: Your Honor, the jury  10 has heard this side of the story. The fact of  11 the matter is with respect to source code, we  12 searched all last night, we went and did a  13 search for Chris Cox's name. He was only there  14 for reviewing a small portion of the very  15 beginning of it, at least what we have.  16 Now, as for the demonstratives, he  17 can testify how he thinks it works with words,  18 he doesn't need prejudicial demonstratives to do  19 that. That's my issue.  20 Thank you, Your Honor.  21 THE COURT: Thank you. I have  22 heard enough. Thank you. The objections to the  23 demonstratives are overruled. As I understand  24 the testimony that Mr. Cox is going to give,</p>

1 it's going to be fact testimony. It's  
2 represented to me that he wrote large portions  
3 of the source code. If that testimony is  
4 impeachable, then I'm confident that Leader will  
5 be able to impeach it.

6 The fact that the demonstrative is  
7 identical or nearly identical to the  
8 demonstrative previously put in front of the  
9 jury is not unduly prejudicial in my view.

10 The procedure for demonstratives,  
11 I could be wrong, it is as it's set out in the  
12 pretrial order, but I think you all agreed that  
13 you were going to get objections by the night  
14 before and discuss them the night before, and  
15 then put them in front of me the morning that  
16 you reasonably believe they're going to be  
17 offered. So it seems that that timing has been  
18 complied with from what I hear.

19 MR. HANNAH: Your Honor, that was  
20 a misrepresentation. The demonstratives sent  
21 last night were the ones that say Christopher  
22 Cox on them. The ones that were sent before  
23 were for one of their experts and did not say  
24 Christopher Cox and said they were going to be

1 MS. KEEFE: Thank you.

2 THE COURT: Okay. Let's bring the  
3 jury in.

4 (Jury entering the courtroom at  
5 9:08 a.m.)

6 THE CLERK: Be seated, please.

7 THE COURT: Good morning, ladies  
8 and gentlemen of the jury. Welcome back. It's  
9 a little bit chilly in here this morning. All I  
10 can tell you is it may stay that way or it may  
11 change. And we'll all stay tuned.

12 All right. Let's continue with  
13 where we left off yesterday.

14 MR. ANDRE: May it please the  
15 Court, Your Honor, we'd like to recall Dr. Vigna  
16 to the stand.

17 THE COURT: Fine.

18 THE WITNESS: Good morning.

19 MR. ANDRE: Your Honor, may I  
20 approach the witness to set up the board again?

21 THE COURT: Yes, you may. And  
22 good morning, Dr. Vigna.

23 THE WITNESS: Oh, good morning.

24 BY MR. ANDRE:

1 cross-examination demonstratives for Dr. Vigna.

2 As soon as they submitted it with  
3 Christopher Cox's pictures and his name and  
4 things like that on the demonstratives, that's  
5 when we raised the objections.

6 THE COURT: But the objections  
7 were raised last night?

8 MR. HANNAH: That's correct.

9 THE COURT: And here they are in  
10 front of me now, so I think that's what our plan  
11 and procedure is. Okay.

12 Ms. Keefe.

13 MS. KEEFE: Sorry. Just one  
14 housekeeping. I think my learned counsel next  
15 to me said that when I said I have no objections  
16 to the exhibits in terms of the Burp and the  
17 Firebug, I meant I won't stand up and make  
18 anymore objections. I think my record is very  
19 clear, so I just wanted to make sure that was  
20 clear.

21 THE COURT: I think the record was  
22 clear. Numerous objections have been made prior  
23 to this very moment and no one is withdrawing  
24 those objections.

1 Q. Good morning, Dr. Vigna.

2 A. Good morning.

3 Q. Is your computer up and running?  
4 Are we ready to go?

5 A. Yeah. I think actually -- yes.  
6 Yes, we are.

7 Q. Okay. So yesterday afternoon we  
8 left off with you showing us the intercept --

9 A. Correct.

10 Q. -- program on your computer for  
11 joining the page; is that correct?

12 A. That is correct.

13 Q. Could you show in the Facebook  
14 source code where those actions take place?

15 A. Yes. So just to recall in this  
16 particular case, I was trying to show what  
17 happens when a user goes from his profile to a  
18 fan page and become a fan -- a fan of that page.

19 And so in this case, let's see,  
20 what happens. And I know that I'm not playing  
21 the video, so -- but I'm going to show very --

22 Q. You need to switch it back.

23 A. Yeah. Yeah. I'm sorry.

24 So what happened here is knowing

Page 630

1 that the user performed his action -- oops -- of  
 2 liking a particular page, and you can see --  
 3 where did I put my laser light safer? Here.  
 4 There is this  
 5 ajax/pages/fan\_status.php that gets executed.  
 6 So that resource is requested of Facebook.  
 7 So if we look at that code and we  
 8 want -- give me one second to get to the right  
 9 drive. Facebook sources/ -- oh, it's Q. Sorry.  
 10 It's changed from yesterday.  
 11 So it's documents produced --  
 12 computers sometimes do what they want.  
 13 MR. ANDRE: Your Honor, while Dr.  
 14 Vigna is getting the computer to work properly,  
 15 we forgot to move an exhibit yesterday, Exhibit  
 16 208 into evidence. We used it with Dr. Vigna.  
 17 THE WITNESS: Okay. Sorry.  
 18 Again, we go back to --  
 19 THE COURT: Hold on a second,  
 20 Doctor. Something else has been said.  
 21 MS. KEEFE: No objection.  
 22 THE COURT: Okay. It's admitted.  
 23 MR. ANDRE: Thank you.  
 24 THE COURT: Dr. Vigna, now you can

Page 631

1 continue now. Sorry.  
 2 THE WITNESS: I'm sorry.  
 3 BY MR. ANDRE:  
 4 Q. I thought I gave you a little time  
 5 out.  
 6 A. No, it's fine. It's just finding  
 7 the right drive because whenever they mount it,  
 8 they mount it differently.  
 9 So in this particular case, we're  
 10 looking at this fan\_status.php. I'm getting  
 11 there super fast.  
 12 Okay. And here it is. And so  
 13 what happens here in the code is, as I showed  
 14 yesterday, there are a number of instructions.  
 15 And the matter of fact of this instruction is to  
 16 make this user a fan of that particular page.  
 17 So if you remember, there was  
 18 first the idea that the user logs in and  
 19 provides a profile picture, for example. And  
 20 then there is the tracking from the initial  
 21 context environment.  
 22 So it's own profile to the new  
 23 context, which is the fan page. And then there  
 24 is an action that is performed that is becoming

Page 632

1 a fan of the page.  
 2 And this action, as a result,  
 3 caused this code to be executed, which it's not  
 4 very expressive in this form. Of course, it's a  
 5 very dry sequence of instruction that just says  
 6 what the system should do.  
 7 And the interesting part is that  
 8 this code at a certain point inserts some  
 9 information in the form of metadata that tracks  
 10 what the user just did. And this is because  
 11 this code calls other code that calls other code  
 12 that calls other code. So it's sort of a  
 13 cascade of calls.  
 14 And the real interesting piece of  
 15 code is actually under  
 16 lib/feed/stories/add/insert.php where there is  
 17 this code that says insert into Minifeed stories  
 18 a set of information. The mid --  
 19 Q. What's a mid?  
 20 A. Oh, sorry. User, what type of  
 21 action performed with respect to what type of  
 22 objects.  
 23 So in this case, it would be this  
 24 user became a fan of this page. And this is how

Page 633

1 the tracking information is stored.  
 2 I mean, if you remember, this is  
 3 sequel. It's a different type of language,  
 4 different from PHP that is used with databases.  
 5 So let me take a step back.  
 6 Databases are one of the many forms in which you  
 7 can store information. So as part of the  
 8 storage component, you can store things in  
 9 files. Like a picture that you just took and  
 10 uploaded from your camera, it's going to be in a  
 11 file. When you want to store structural  
 12 information, one of the possible ways to do it  
 13 is to use a database.  
 14 A database is a series of tables  
 15 that contain information. And, for example, in  
 16 this particular case, the information could be  
 17 the user that performed the action, when this  
 18 action was performed, the type of action.  
 19 So the story type, as you can see  
 20 here, you can see the type of action, when this  
 21 was updated. So, for example, if somebody makes  
 22 a comment on this story, this metadata will be  
 23 updated.  
 24 The actual ID, so what is -- who

1 actually performed this particular -- this  
2 particular action. So all this information is  
3 stored in this database, which is part of the  
4 storage component and represents metadata which  
5 tracks the user when the user performs an  
6 action.

7 And, of course, it takes into  
8 account the fact that the user moved from its  
9 profile to the fan page because, in fact, it  
10 says, you know, it's the fan page that gets  
11 liked by this user.

12 Thank you.

13 Q. And is that the extent of the code  
14 for fanning a page?

15 A. Sure?

16 Q. Is that all the codes you're going  
17 to show us for fanning a page?

18 A. Yes.

19 Q. And then the third use case that  
20 you've talked about is importing a photo into a  
21 group?

22 A. Right.

23 Q. And can you -- could you show the  
24 jury on your computer how that actually happens

1 generated and that's exactly what I show  
2 afterwards. So it's a request for a group.php  
3 passing \$ parameter.

4 As you can see here, the ID of the  
5 group. Okay.

6 And then I will show you that, of  
7 course, when I look at the parameters, you will  
8 see that there is the ubiquitous C user here and  
9 this identifier identifies uniquely the user.

10 So I can track the user going from his own  
11 profile to the group's page.

12 Okay. So that's the tracking, how  
13 I keep track of who you are and where you are.

14 Okay. Then -- so, there is this  
15 information.

16 The group ID as I told you, the  
17 cookie. And so when this information is let go  
18 to Facebook, as a result, here we are at the  
19 Italian Food Lover group. We click on the photo  
20 tab and again, as a result of clicking a new  
21 request is performed, again, for the photo tab  
22 of the group. We let this request go through  
23 and we find that we have no photos. But we have  
24 a button that allows us to add group photos.

1 on the Facebook website?

2 A. Right. So if you remember the  
3 previous step in this situation was when the  
4 user goes to the profile and decides to upload  
5 one of the pictures to one of his own files.  
6 And it was the picture of this granita thing  
7 that is like a Sicilian ice cream kind of thing  
8 since we're talking about food.

9 But in this case, the user this  
10 time decides to go to the groups, and in  
11 particular this Italian Food Lovers that the  
12 user, John Vitteyard, is a member of. And as a  
13 result, you can see a request is performed.

14 Let me just stop really briefly.  
15 So again, when the user -- since yesterday there  
16 was a lot of stuff going on. Here is the --  
17 here is when the user clicks on that link  
18 Italian Food Lovers as the user experiences.

19 This is the UI. This is the user  
20 interface that the user interacts with Facebook.  
21 Of course, the user just wants to click and go  
22 to the group.

23 What I'm showing is that when the  
24 user clicks there, as a result, a new request is

1 And this let's me choose from --  
2 and let me just stop for a second. When I  
3 decide to add a photo to this group that I want  
4 to share with other people in the group,  
5 Facebook offers me the possibility of uploading  
6 one of my personal albums that contains my  
7 pictures. And this is because this is the  
8 picture that I uploaded in my personal page in  
9 my first user environment.

10 Now I'm accessing this information  
11 from the second user environment which is the  
12 group.php. So proceeding with example, this  
13 request for photo select is performed, it's  
14 another server side component that says, you  
15 know, what is the object ID, what is the album  
16 ID. And when the request is performed, I can  
17 choose different pictures.

18 In this particular case, I choose  
19 the picture that I uploaded in the first  
20 context, my, you know, ice cream depiction here

21 When I choose the ice cream, I  
22 said add selected photos. What happened? That  
23 again, photo select is invoked and we will see  
24 in detail what happens when this particular

Page 638

1 component is executed.  
 2 But you can see that there is --  
 3 all this is information that is captured as part  
 4 of simply selecting this picture and saying I  
 5 want to add this picture to this album in this  
 6 particular group. So this is the request that  
 7 is actually sent to Facebook.  
 8 This is what happens under the  
 9 hood. And as a result, here we are, we have  
 10 some photos from Italian Food Lovers, the  
 11 picture, and when I go back to -- whoops, fade  
 12 out too fast.  
 13 It's important to note that when I  
 14 go back to my own profile this time, I see in  
 15 this particular -- in my news feed a record that  
 16 say, oh, John Vineyard actually added this  
 17 picture to the group. And this is because they  
 18 track me moving to the group. They track the  
 19 fact that I added that picture. And now they're  
 20 showing to me and to everybody who can be  
 21 interested in this information that I performed  
 22 this particular action.  
 23 And I can switch to the code here  
 24 if you want.

Page 639

1 Q. That was my next question. Can  
 2 you show us in the code where the activity you  
 3 just described occurs?  
 4 A. Again, I have to use my expert  
 5 report. So as we were looking at the video that  
 6 we were looking for photoslect.php. So we can  
 7 start from there. And this is the source code  
 8 of that particular application.  
 9 And what happens here it's pretty  
 10 much that at a certain point, this file does  
 11 many things, so invokes other code, it invokes  
 12 other code that includes the new picture in the  
 13 album of the group. And at this point you can  
 14 see here that it decide to -- we publish the  
 15 current story, okay, and the actual effect of  
 16 this particular piece of code, if you look at  
 17 the implementation of that particular function  
 18 is the following --  
 19 Q. Dr. Vigna just so we have a nice  
 20 record here on the case, can you just read the  
 21 function call?  
 22 A. Oh, the function call is add  
 23 photos action publish current story.  
 24 Q. Thank you.

Page 640

1 A. Thank you. We just took at the  
 2 code and just move fast. Sorry about it.  
 3 This is what gets actually invoked  
 4 and you can see in the implementation, it says  
 5 publishes the current photo upload story  
 6 associated with this album/object I.D. So this  
 7 is the code that actually goes and updates the  
 8 metadata that says this guy published a picture  
 9 in this particular album, so that all the  
 10 actions, I mean, important actions that are  
 11 performed on the website are actually tracked in  
 12 the metadata. And I'm done with this.  
 13 MR. ANDRE: I think, Your Honor,  
 14 we were finished with the code for the time  
 15 being, so we can unseal the record.  
 16 THE COURT: Fine. Let us know if  
 17 and when we will seal it again.  
 18 MR. ANDRE: We'll go back to codes  
 19 periodically, but we'll let you know.  
 20 Thank you.  
 21 BY MR. ANDRE:  
 22 Q. Dr. Vigna, I want to start showing  
 23 you some public documents that Facebook produces  
 24 and we'll start with Exhibit PTX 300.

Page 641

1 A. Okay.  
 2 Q. Dr. Vigna, do you recall looking  
 3 at the Facebook page's March 2009 document?  
 4 A. Yes.  
 5 Q. If we can turn to the page with  
 6 the Bates number ending in 900, about the sixth  
 7 page into the document, and highlight the first  
 8 paragraph there.  
 9 A. Yeah. This is a rather  
 10 interesting document because this pages are this  
 11 fan's pages like the Giants or the Philadelphia  
 12 Eagles.  
 13 Q. The Eagles.  
 14 A. The Eagles.  
 15 And so what Facebook is telling  
 16 customers in this particular case is that it is  
 17 possible to actually track what users do. And  
 18 in fact, we are using this Insights tool. And  
 19 it says you would be able to see how many  
 20 comments fans make on your post and you'll be  
 21 able to track how many Facebook users start and  
 22 stop viewing your posts in News Feed.  
 23 And this is pretty good example of  
 24 how Facebook uses this tracking information



1 to -- you know, a number of different ways, so  
2 that it knows where people are, who they are,  
3 and what they do on the website.

4 Q. When you talk about posting in  
5 news feeds, what's that referring to actually?

6 A. So the news feeds is one of the  
7 tracking metadata that is maintained by  
8 Facebook. As I showed in my little scheme  
9 there, the tracking information is performed --  
10 tracking is performed in a number of different  
11 ways. There is that cookies that I showed in  
12 the request that is showing the user as it moves  
13 through the site.

14 And then there are minifeed and  
15 multifeed entries which technically speaking are  
16 just information that says this person did this  
17 particular action and it's stored in a number of  
18 different ways, tables in the database, memory  
19 cache, but mainly they're stored as metadata to  
20 represent what the user has done on the website.

21 Q. And what does news feed look like  
22 to a user on the Facebook website?

23 A. I showed it, actually I can show  
24 it -- this, for example, is the news feed. And

1 A. Yeah,

2 So this particular sentence is  
3 describe how the news feed, so this information  
4 about what people do on the website can be used  
5 as a tool to, you know, connect many different  
6 people. So it says the news feed on user's home  
7 pages tells them what is happening around them  
8 on Facebook. Because they track all these  
9 actions. For example, when a user add you as a  
10 politician that they support, their friends on  
11 Facebook will hear about it in their own news  
12 feeds. Because this act that a person that  
13 decide is a fan of this particular politician,  
14 we will store in the metadata and then shared  
15 and used to connect different people through the  
16 news feed.

17 MR. ANDRE: Your Honor, I would  
18 like to move Exhibit PTX 302 into evidence.

19 MS. KEEFE: No objection.

20 THE COURT: It's admitted.

21 BY MR. ANDRE:

22 Q. Next, I would like to turn to one  
23 more public document, PTX 1001. Dr. Vigna, do  
24 you recall seeing this document?

1 it shows that the news feed on the website is a  
2 selection of this metadata that is presented to  
3 the user.

4 In this particular case, I am on  
5 John Vineyard's profile. And this tracking  
6 metadata is selected. And the event that I add  
7 a photo nine seconds ago is presented on that  
8 particular page.

9 Q. I would like to turn your  
10 attention to --

11 MR. ANDRE: Your Honor, I would  
12 like to move PTX 300 into evidence.

13 MS. KEEFE: No objection.

14 THE COURT: It's admitted.

15 BY MR. ANDRE:

16 Q. I would like to turn your  
17 attention to PTX 302.

18 Dr. Vigna, do you recall looking  
19 at this document entitled Politician Users Guide  
20 to Facebook?

21 A. Yes, I think there is an  
22 interesting part on the second page.

23 Q. On the second page, under point  
24 three, here?

1 A. Yeah, that's the Facebook privacy  
2 policy.

3 Q. If you go to the second page.  
4 Under the information. I know this is hard to  
5 read.

6 A. So this is something that say the  
7 information that they collect when you interact  
8 with Facebook. And it says we keep track of the  
9 actions that you take on Facebook such as adding  
10 a friend, becoming a fan of a Facebook page, et  
11 cetera, et cetera, et cetera.

12 So this is sort of like a clear  
13 evidence that they keep track of the actions of  
14 other people. So there is definitely a tracking  
15 component.

16 Q. What's this referring to here,  
17 access device and browser information?

18 A. They also collect -- they collect  
19 information about the type of system that you  
20 use to access the website.

21 Q. And finally this last portion, the  
22 cookie information, what's that referring to?

23 A. Yeah. So this is that see user  
24 information that is used to see where you are on

<p style="text-align: center;">Page 646</p> <p>1 the website, so this is the use of a cookie  2 which is this little piece of information that  3 is sent back and forth to the user every time it  4 access the website.  5 And they say that they use this  6 particular type of technology to identify if  7 you're logged into Facebook and where you send  8 your request.  9 MR. ANDRE: I would like to move  10 document PTX 1001 into evidence.  11 MS. KEEFE: I note for the record  12 that it's not the correct version, but otherwise  13 I have no objection.  14 THE COURT: It's admitted.  15 BY MR. ANDRE:  16 Q. Go back up to the exhibit, would  17 you, please, just based on the objection. Would  18 you go to the bottom corner here. Down here,  19 the date of the printing of this document.  20 Dr. Vigna, when was this document printed?  21 A. It looks like April 8, 2010.  22 Q. Thank you.  23 Now, I would like to turn your  24 attention to some of the confidential documents</p>	<p style="text-align: center;">Page 648</p> <p>1 MS. KEEFE: No objection.  2 THE COURT: It's admitted.  3 BY MR. ANDRE:  4 Q. Dr. Vigna, I'd like to turn your  5 attention to PTX-191.  6 Are you familiar with this  7 document, Dr. Vigna?  8 A. Yes.  9 Q. What's this document about?  10 A. So this document describes  11 Multifeed or Multifeed, which is one of the ways  12 in which things are tracked. If you remember,  13 the published current story in documentation.  14 It would say this is how you  15 publish to Multifeed. So as Facebook uses  16 different mechanisms to track different types of  17 actions, and altogether they represent a  18 tracking component.  19 One of these subcomponents of the  20 tracking system is the Multifeed. And this is  21 very technical and maybe -- can you highlight  22 point two and this thing about the leaves?  23 The leaves is a technical term.  24 It's not important.</p>
<p style="text-align: center;">Page 647</p> <p>1 regarding the tracking component. If we go to  2 PTX 180. Up here at the top in particular, Dr.  3 Vigna, are you familiar with this document?  4 A. Yeah, so this is a document that  5 describe the login process, so how people. So  6 how people initially engage with the Facebook  7 site, and in particular describe cookies and how  8 cookies are used. And you can see that the  9 first entry, there's a -- three critical  10 cookies.  11 And the first one is actually the  12 C user, the current user, which is a user ID of  13 the user, which is only set when the user is  14 actually logged in. So the moment you're logged  15 into the website, this cookie set is used to  16 track every single interaction with the website,  17 so that they always know who you are and where  18 you are on the web site.  19 Q. And Dr. Vigna, is this one of the  20 documents from Facebook's confidential internal  21 wiki?  22 A. That is correct.  23 MR. ANDRE: Your Honor, I'd like  24 to move into evidence Exhibit PTX-180.</p>	<p style="text-align: center;">Page 649</p> <p>1 But it says the server stores in  2 memory all the recent actions for some subset of  3 the users and loads the action off of log file  4 and then receives new action via RPC.  5 There is a lot of technical terms  6 here that are difficult to explain in a simple  7 way. But the basic idea is that this component  8 is responsible for tracking the actions of users  9 on the website.  10 Q. And when it talks about stores in  11 memory all the recent actions for some subset of  12 the users on the site, what's that referring to?  13 A. So this is referring to the  14 storage component and how, for example, storage  15 can be done in different ways. And I was making  16 that analogy with the storage in a storage unit  17 where you put stuff that you use frequently in a  18 way that you can access easily.  19 So also the metadata that is used  20 to track is stored in database, some of that,  21 for example, the Multifeed is stored in the user  22 database. And other information like the  23 Multifeed is actually stored in a memory cache.  24 That's still storage, so there's</p>

1 still -- the concept is you put there something  
2 and later you will be able to take it out. It's  
3 just implemented using a slightly different  
4 technology.

5 MR. ANDRE: Your Honor, I'd like  
6 to move PTX-191 into evidence.

7 MS. KEEFE: No objection, Your  
8 Honor.

9 THE COURT: It's admitted.

10 BY MR. ANDRE:

11 Q. Just for the record, Dr. Vigna,  
12 the PTX-191, was that from the confidential  
13 internal Facebook wiki?

14 A. Yes.

15 Q. I'd like to show you what's been  
16 marked as Exhibit PTX 341.

17 Dr. Vigna, are you familiar with  
18 this document?

19 A. Yeah. So this is a very -- again,  
20 a very technical document that exists by the  
21 internal -- by the developers, the engineers,  
22 developers of Facebook and explains how to log a  
23 new action.

24 So suppose that Facebook currently

1 MS. KEEFE: No objection, Your  
2 Honor. I would also like to note for the record  
3 they do have the material that's behind the  
4 redacted.

5 THE COURT: Thank you. That's not  
6 necessary. It's admitted.

7 BY MR. ANDRE:

8 Q. I'd like to turn your attention to  
9 PTX-269, please.

10 Dr. Vigna, are you familiar with  
11 this document?

12 A. Yes. So this document is a way to  
13 describe how you can access all the action of a  
14 particular user.

15 So it's called activity stream  
16 which is sort of the composition of all the  
17 actions that have been performed by a certain  
18 user. And since there are many uses for this  
19 one that I -- suppose that I want to perform  
20 statistics on where people go, so that I know  
21 exactly what their behavior is.

22 I can use this particular API to  
23 go to Facebook and say, Okay, give me all the  
24 activity stream for this particular user. And

1 tracks you when you fan a page, when you upload  
2 a photo, when you become a friend of somebody.  
3 What if some new functionality comes out and  
4 suddenly I want to track?

5 For example, if you decide to -- I  
6 don't know -- go away from a group. When you  
7 detach from a group, I'm sure that it's already  
8 logged, but just to give an example something  
9 that wasn't logged before and that it wants to  
10 log now. And this document explains how to add  
11 a new event so that it gets logged.

12 And some of the information is  
13 being redacted and removed. But the basic idea  
14 explains you have to go to this particular file  
15 and modify it so that you can log also this  
16 event which is additional additive. That is,  
17 they track and they have an active mechanism  
18 that can even be extended to track the actions  
19 of the users.

20 Q. And is this also from the internal  
21 Facebook confidential wiki?

22 A. That's correct.

23 MR. ANDRE: Your Honor, I'd like  
24 to move into evidence Exhibit PTX-341.

1 you can see that in the third line, it says, you  
2 know, for information about streams, say, using  
3 the stream in API, this is another document  
4 which -- but this is the technical part that  
5 describes how one can go to Facebook and say,  
6 Please give me a list of all the actions that  
7 this user performs. So the stream of actions  
8 that have been tracked.

9 Q. When it talks about here, it says,  
10 Facebook syndicates users' streams including  
11 from both the News Feed and the Wall.

12 When they say Wall, can you  
13 refresh our memory what that is again?

14 A. Yeah. As I was saying, there are  
15 different components that may make together the  
16 tracking component.

17 The News Feed and the Wall are how  
18 this tracking information is presented to the  
19 user. And they're mapped to, for example, the  
20 Multifeed that we discussed before. And the  
21 Minifeed, that is another way of tracking  
22 information.

23 And what this is saying is that  
24 third-party applications can go to Facebook and,

Page 654

1 under an agreement, can say, Okay. I want to  
 2 know what Giovanni -- all the stream of action  
 3 that Giovanni recently performed on the website.  
 4 And by following this protocol, they can get  
 5 that information.  
 6 Q. And if you go down to the next  
 7 paragraph where it says, reading, the stream  
 8 here, does that actually give the actual  
 9 instruction right here as to how the user would  
 10 do that?  
 11 A. Yeah. This is sort of technical,  
 12 but if you highlight the second line, it  
 13 explains, sorry, the third line.  
 14 I left that out. So this explains  
 15 exactly how to put together a request similar to  
 16 the request that I showed you in my intercepter.  
 17 So that that particular stream and that  
 18 particular user can be queried and that  
 19 information obtained.  
 20 Q. Is this document also from the  
 21 confidential internal Facebook wiki?  
 22 A. I think so, in my recollection.  
 23 But it should be up in the right corner.  
 24 Yeah, I think so.

Page 655

1 MR. ANDRE: Your Honor, I'd like  
 2 to move in PTX-269 into evidence?  
 3 MS. KEEFE: No objection, Your  
 4 Honor.  
 5 THE COURT: It's admitted.  
 6 BY MR. ANDRE:  
 7 Q. Dr. Vigna, yesterday we saw  
 8 videotape depositions of Mr. Wiseman, Wang, Rose  
 9 and Bosworth. Did you rely on the testimony of  
 10 those engineers in formulating your opinion?  
 11 A. Yes, I did.  
 12 Q. And how did you do that?  
 13 A. I read their depositions.  
 14 Q. And did that inform your opinion  
 15 as to how the Facebook website operates?  
 16 A. Yes.  
 17 Q. Dr. Vigna, based on everything  
 18 you've shown us yesterday afternoon and this  
 19 morning, do you have an opinion as to whether or  
 20 not the Facebook website infringes the second  
 21 element of Claim 1?  
 22 A. Yes. I have an opinion.  
 23 Q. And what's your opinion?  
 24 A. The opinion that it infringes the

Page 656

1 claim and the element.  
 2 Q. And that's the tracking component  
 3 element?  
 4 A. Correct.  
 5 Q. Could you put a red check in that  
 6 box over on the board next to you?  
 7 A. All right. One down, 20 to go.  
 8 Q. I want to show you what's marked  
 9 as Exhibit PTX-942 now.  
 10 A. Yes.  
 11 Q. Dr. Vigna, do you have a -- do you  
 12 have the jury binder up there, by any chance?  
 13 A. No. You want me to have those  
 14 exhibits?  
 15 Q. Yeah. That's fine.  
 16 A. I have PTX-942.  
 17 Q. Could you just flip through that  
 18 and tell us what we're looking at in this  
 19 exhibit?  
 20 A. Yeah. So this is a sort of heavy  
 21 exhibit, but it's a series of snapshots that in  
 22 a way reproduces the use cases that I showed you  
 23 before.  
 24 So, for example, this very

Page 657

1 beginning one is where John Vineyard actually  
 2 subscribed to the website. And if you can go  
 3 next, and that is just the process of actually  
 4 subscribing and creating accounts on the  
 5 website.  
 6 So this is what you would go  
 7 through if you decide to join Facebook. Go  
 8 ahead.  
 9 And the user logs in and it's sent  
 10 to his own page.  
 11 Q. Okay. So does Exhibit --  
 12 A. 942.  
 13 Q. -- 942. Does Exhibit 942  
 14 represent every figure -- I mean, every screen  
 15 shot that you've demonstrated on your  
 16 intercepter program the last two days?  
 17 I mean, with the exception of the  
 18 behind the hood.  
 19 A. Yeah. Yeah.  
 20 That is very similar to what I  
 21 showed there --  
 22 Q. Okay.  
 23 A. -- in my demonstrations.  
 24 Absolutely.

Page 658	Page 660
<p>1 And if you go on, I will show you 2 that this is how the other user connects. So 3 Mary Smith, that was the other friend, also 4 becomes a member of the website. 5 Go forward. Here it shows how a 6 user --</p>	<p>1 After that, the context component 2 dynamically storing the context information in 3 metadata associated with the user-defined data, 4 the user-defined data and metadata stored on a 5 storage component of the network-based system. 6 And we have seen how pictures or 7 data provided by the user and the context 8 information are stored on the context component</p>
<p>7 Q. I'm sorry. I want to walk you 8 through the claims of this, if you don't mind.</p>	<p>9 Q. On the storage component?</p>
<p>9 A. Okay. We can do that.</p>	<p>10 A. Yes, on the storage component.</p>
<p>10 Q. Using the screen shots you have in 11 Exhibit 942, could you put up Claim 1? Now, the 12 first part of the claim, the preamble here, it 13 says a computer-implemented network-based system 14 that facilitates management of data.</p>	<p>11 Thank you. 12 And if you go next, you can see 13 that this is actually the other user. We will 14 see now some slides in which the user become 15 friend of each other, it's not important, it's 16 just to create a connection.</p>
<p>15 Do you see that?</p>	<p>17 You can see you go forward, Mary 18 Smith finds John Vineyard, oh, I know this guy, 19 I would like to be a friend, so sends a friend 20 request. And next. And John Vineyard finds the 21 request from Mary Smith and there is that button 22 at the top that says confirm friend and they 23 become friends.</p>
<p>16 A. Yes.</p>	<p>24 So next. So now you can see that</p>
<p>17 Q. Is the Facebook website such a 18 computer-implemented network-based system that 19 facilitates management of data?</p>	
<p>20 A. Yes, it is.</p>	
<p>21 Q. Now, walking through Exhibit 942, 22 could you show us where each of these parts of 23 the context component is located?</p>	
<p>24 A. Yes.</p>	
Page 659	Page 661
<p>1 So if we go back to -- let's see. 2 If I stay here, maybe I can look at two things 3 at the same time. Sorry.</p>	<p>1 at the bottom there is the picture of Mary 2 Smith, which are now friends, and this actually 3 also information that is tracked. But the 4 important thing is if you go to the next one.</p>
<p>4 So we just look at the 5 computer-implemented network-based system that 6 facilitates management of data. Now we need a 7 computer-implemented context component of the 8 network-based system for capturing context 9 information associated with user-defined data 10 created by user interaction of a user in a first 11 context of the network-based system.</p>	<p>5 Q. Dr. Vigna, just so we can have a 6 record, this is the slide that we're talking 7 about before was 157098? 8 A. Yes. 9 Q. It's for the court reporter, it's 10 easier to find in the record?</p>
<p>12 Here the user uploads a profile 13 feature. If you go to the next slide you can 14 see that the picture has been updated. As I 15 showed you yesterday, when this happens behind 16 the hood, this context information is captured 17 and stored as metadata.</p>	<p>11 A. Sorry. Sorry. Thank you. Thank 12 you very much. 13 So at this point there is an 14 important point because the user moved to the 15 second context. So the user, John Vineyard, 16 goes to visit the profile of Mary Smith, okay, 17 his friend. And it is tracked when moved from 18 the second -- from the first context to the 19 second context. Okay?</p>
<p>18 And if you go -- and if you 19 remember, the particular metadata was in the -- 20 those SQL queries that would update this data 21 about the picture with additional information 22 such as the time, the album I.D. and the year, 23 so that's the context information that is 24 captured and stored in the metadata.</p>	<p>20 Next, what the user is going to do 21 is going to write something on the wall of the 22 user, particularly going to say how are you. 23 And when this share button is pressed, next, 24 what happens is that this information is printed</p>

Page 662	Page 664
<p>1 on the wall.</p> <p>2 And you can see that when this</p> <p>3 happen, and I showed you this yesterday by</p> <p>4 showing you the code and what happens under the</p> <p>5 hood, but when the share button is pressed,</p> <p>6 there is tracking information in the form of a</p> <p>7 story that says this person wrote on this</p> <p>8 person's wall, that is the track happened</p> <p>9 because they tracked that you went from one</p> <p>10 profile to another. And when an action is done,</p> <p>11 automatically the metadata is updated with</p> <p>12 tracking information that says this person wrote</p> <p>13 on this other person's wall. And also when this</p> <p>14 happens, the user access the data from the</p> <p>15 second context.</p> <p>16 And you can see that in the second</p> <p>17 context the information that was uploaded in the</p> <p>18 first context, my profile is accessed. If you</p> <p>19 remember yesterday, I showed you with that --</p> <p>20 the code that would show how that particular</p> <p>21 element is actually associated with the</p> <p>22 retrieval of that picture from Facebook, the</p> <p>23 picture that was uploaded in the first context.</p> <p>24 Q. Just for the record, that is slide</p>	<p>1 component element where it talks about</p> <p>2 dynamically updating the stored metadata based</p> <p>3 on the change, where it the user accesses the</p> <p>4 data from the second context, do you see that?</p> <p>5 A. Yes.</p> <p>6 Q. From an expert opinion and</p> <p>7 technical perspective, do you understand what</p> <p>8 that's referring to?</p> <p>9 A. Yes.</p> <p>10 Q. Can you please describe what that</p> <p>11 is talking about to the jury?</p> <p>12 A. Okay. Dynamically means</p> <p>13 automatically and in response to the preceding</p> <p>14 event. So going back to one of the examples,</p> <p>15 the moment the users share in the how are you</p> <p>16 message in response to that event, automatically</p> <p>17 a story is created in the metadata. Now this</p> <p>18 story is based on the fact that you change from</p> <p>19 the profile to another. So it takes that fact</p> <p>20 into account.</p> <p>21 In fact, if you would write the</p> <p>22 story on your own wall it would be a different</p> <p>23 story. Instead the story is you went to Mary's</p> <p>24 wall and wrote how are you. So the idea is that</p>
Page 663	Page 665
<p>1 number LTI 157101; correct?</p> <p>2 A. That is correct.</p> <p>3 If you go next, I think that what</p> <p>4 it shows is that back in my first profile, this</p> <p>5 metadata about John writing on Mary Smith is</p> <p>6 presented in my own wall. Thank you.</p> <p>7 Q. And based on that, go back to the</p> <p>8 claim. We lost our highlighting on that.</p> <p>9 So is it your understanding that</p> <p>10 each one of these elements, both elements of the</p> <p>11 claim have been met by the screen shots you just</p> <p>12 demonstrated?</p> <p>13 A. Yes.</p> <p>14 Q. Now, you said earlier that you</p> <p>15 relied upon the Court's claim construction order</p> <p>16 in this case; correct?</p> <p>17 A. That is correct.</p> <p>18 Q. Dr. Vigna, do you understand that</p> <p>19 the Court has construed the term dynamically to</p> <p>20 mean automatically and in response to the</p> <p>21 preceding event?</p> <p>22 A. Correct.</p> <p>23 Q. If you go back to the claim</p> <p>24 language again. If you look at the tracking</p>	<p>1 when these actions are taken, the metadata, the</p> <p>2 tracking metadata that is right here, that's</p> <p>3 automatically updated with a story that takes</p> <p>4 into account the fact that you changed from one</p> <p>5 place to another.</p> <p>6 In a way this is an important</p> <p>7 aspect of this system, the fact that what you do</p> <p>8 is based on how you change your access in the</p> <p>9 system. You go to one profile to another, the</p> <p>10 fact that you found the Giants' page and not the</p> <p>11 Philadelphia Eagles is taken into account. So</p> <p>12 the metadata is based on this particular change</p> <p>13 in access.</p> <p>14 And it's automatically updated as</p> <p>15 a response to your action. And why you do that</p> <p>16 in addition, the user access the data from the</p> <p>17 second context.</p> <p>18 So when you do this action after</p> <p>19 you move, there is this data that you created in</p> <p>20 the first context that is also used in the</p> <p>21 second context. And we have seen this, for</p> <p>22 example, when the little picture appears in the</p> <p>23 wall post.</p> <p>24 We also have seen it, for example,</p>

Page 666	Page 668
<p>1 when a picture has been added to the album of  2 the Italian Food Group, you can see that the  3 picture that was uploaded in the first context  4 is not used in the second context. So in that  5 particular case, it's sort of like a different  6 walk through, but the user uploaded the picture  7 of the Sicilian ice cream, then moved to the  8 group and decided to include that picture.  9 And when that -- when that action  10 was performed, tracking information was  11 dynamically updating the metadata. And when  12 that happened, the data that was created in the  13 first context will also brought in the second  14 context, because the picture that was in my  15 recipe became a picture of the Italian Food  16 Lovers group.  17 Q. Thank you for that explanation.  18 Did you find that every element in  19 Claim 1 is infringed by the Facebook website?  20 A. Yes.  21 Q. Do you have an opinion as to  22 whether the Facebook infringes Claim 1 under the  23 Doctrine of Equivalents?  24 A. Yes, I do.</p>	<p>1 substantially the same function as a tracking  2 component of Claim 1?  3 A. Yes.  4 MS. KEEFE: Leading. Objection.  5 Leading.  6 THE COURT: I'm going to overrule  7 it.  8 MR. ANDRE: Thank you, Your Honor.  9 THE WITNESS: Yes.  10 BY MR. ANDRE:  11 Q. Why is that?  12 A. Well, because it is Facebook is  13 obviously tracking, it has a component to track  14 the change of a user from a first context to a  15 second context and dynamically updates the  16 stored metadata based on the change when the  17 user accesses the data from the second context.  18 Q. At the very least, does the  19 Facebook website perform in substantially the  20 same way as the context component of Claim 1?  21 A. You mean to achieve the same  22 result?  23 Q. No, the same way, function, way,  24 result.</p>
Page 667	Page 669
<p>1 Q. And what is your opinion?  2 A. Well, my opinion is that Facebook  3 directly and literally infringes Claim 1, and  4 since -- and at least it infringes it under the  5 Doctrine of Equivalents because it does  6 substantially the same thing in the same way to  7 achieve the same result.  8 Q. And I apologize. This is going to  9 be a little bit tedious, but we have to make a  10 record of this.  11 So specifically at the very least  12 does the Facebook website perform substantially  13 the same function as the context component of  14 Claim 1?  15 A. Yes.  16 Q. Could you explain why you think it  17 would perform substantially the same function?  18 A. Because it captures context  19 information associated with user-defined data,  20 and created by interaction of the user with the  21 system and stored this context information with  22 the data in metadata using a storage component.  23 Q. And specifically, at the very  24 least, does the Facebook website perform</p>	<p>1 A. Yeah, it does.  2 Q. And what do you base that on?  3 A. Well, the fact that the system  4 results in having the context information  5 collected and stored as metadata and the  6 tracking information being automatically updated  7 in the metadata.  8 Q. At the very least does the  9 Facebook website perform in substantially the  10 same way as the tracking component of Claim 1?  11 A. Yes.  12 Q. And why is that?  13 A. Because it is tracking the user  14 from one context to another context and  15 dynamically update the stored metadata based on  16 the change when the user access the data from  17 second context.  18 Q. And at the very least does the  19 Facebook website yield the same results as the  20 context component of Claim 1?  21 A. The same results of the context  22 component, yeah, because context information is  23 collected and stored as metadata.  24 Q. At the very least does the</p>

Page 670	Page 672
<p>1 Facebook website yield the same results as the</p> <p>2 tracking component of Claim 1?</p> <p>3 A. Yes. The result is that the user</p> <p>4 gets tracked and the tracking information is</p> <p>5 recorded as part of the metadata.</p> <p>6 Q. So is it your opinion that Claim 1</p> <p>7 is infringed literally or at the very least</p> <p>8 under the Doctrine of Equivalents --</p> <p>9 A. That's correct.</p> <p>10 Q. -- by Facebook's website?</p> <p>11 A. That is correct.</p> <p>12 Q. Could I get you to put a check box</p> <p>13 at the top of Claim 1, then?</p> <p>14 A. All right. (Witness complying.)</p> <p>15 Q. Let's turn to the two dependent</p> <p>16 claims of Claim 1 and Claim 4.</p> <p>17 Do you have an opinion as to</p> <p>18 whether or not the Facebook website infringes</p> <p>19 the dependent Claim 4 of the '761 patent?</p> <p>20 A. Yes, I do.</p> <p>21 Q. What is your opinion?</p> <p>22 A. That it infringes.</p> <p>23 Q. And could you show us in the</p> <p>24 source code --</p>	<p>1 And it says that the context</p> <p>2 information includes a relationship between the</p> <p>3 user and at least one of an application,</p> <p>4 application data, and a user environment. Okay?</p> <p>5 And in this particular case, for</p> <p>6 example, in use case number one, I showed you</p> <p>7 how the context component captures all the</p> <p>8 information and then stores it. And the actual</p> <p>9 file that performs that function is HTML, this</p> <p>10 particular file, pic upload.php.</p> <p>11 And this in particular is the file</p> <p>12 that receives all the information from the user</p> <p>13 and transforms the information and processes it</p> <p>14 and invokes other function, other files, until</p> <p>15 it gets into lib photos.php, another file. And</p> <p>16 this particular file has as this function to say</p> <p>17 insert into photo the AID, the album FID, the</p> <p>18 user, the creator ID and so forth.</p> <p>19 And you can see that the context</p> <p>20 information, which is all this information that</p> <p>21 is added, that is captured whenever the photo is</p> <p>22 up -- when the photo is uploaded and stored in</p> <p>23 the metadata, includes a relationship between</p> <p>24 the user. In fact, we even have a user</p>
<p style="text-align: center;">Page 671</p> <p>1 MR. ANDRE: And, Your Honor, I</p> <p>2 would seal the record for this portion.</p> <p>3 BY MR. ANDRE:</p> <p>4 Q. Could you show us in the source</p> <p>5 code where Claim 4 or the elements of Claim 4</p> <p>6 are found in the Facebook website?</p> <p>7 A. Yes.</p> <p>8 THE COURT: Do you have to switch</p> <p>9 from the Elmo?</p> <p>10 A. So give me one minute. So, for</p> <p>11 example, in the example that I show where the</p> <p>12 user was uploading his own profile picture, we</p> <p>13 can see that in, for example, the function used</p> <p>14 upload the picture itself, which is --</p> <p>15 Q. Before you show that, can you</p> <p>16 describe generally what Claim 4 is referring to?</p> <p>17 A. Sorry. Yeah. So the claim, the</p> <p>18 Claim 4 describes a system that is a system of</p> <p>19 Claim 1, and in addition, the context</p> <p>20 information that is captured. So if you</p> <p>21 remember, if you remember here there is the</p> <p>22 user, the data and there is a context component</p> <p>23 that captures in addition to the data context</p> <p>24 information to be stored in the metadata.</p>	<p style="text-align: center;">Page 673</p> <p>1 component right up here.</p> <p>2 And at least one of the</p> <p>3 application, application data and user</p> <p>4 environment. And for example, in the user</p> <p>5 environment, we have the particular album ID,</p> <p>6 which this photo is uploaded.</p> <p>7 Q. And based on the evidence you've</p> <p>8 just identified and the previous documents and</p> <p>9 evidence you've shown in the last couple of</p> <p>10 days, do you have an opinion as to -- does that</p> <p>11 support your opinion that Facebook's website</p> <p>12 infringes Claim 4?</p> <p>13 A. Yes, it does.</p> <p>14 Q. Could you put a check box in --</p> <p>15 check in the box next to Claim 4?</p> <p>16 A. Yes.</p> <p>17 MR. ANDRE: Your Honor, we can</p> <p>18 unseal the record at this point.</p> <p>19 BY MR. ANDRE:</p> <p>20 Q. Dr. Vigna, if you'll turn to the</p> <p>21 next dependent claim, Claim 7. Do you see that?</p> <p>22 A. Yeah.</p> <p>23 Q. Do you have --</p> <p>24 MR. ANDRE: Your Honor, just one</p>



Page 674	Page 676
<p>1 housekeeping matter. I'd like to move Exhibit 2 PTX-942 into evidence as well. 3 MS. KEEFE: No objection. 4 THE COURT: It's admitted. 5 BY MR. ANDRE: 6 Q. Now, let's go to Claim 7. Do you 7 have an opinion as to whether the Facebook 8 websites infringes Claim 7 of the '761 patent? 9 A. Yes, it does. 10 Q. What's that opinion? 11 A. That the Facebook site infringes 12 Claim 7. 13 Q. Could you briefly describe what 14 Claim 7 is referring to? 15 A. So it is describing the system of 16 Claim 1, plus the fact that data created in the 17 first context is associated with data created in 18 the second context. And if you put, for 19 example, the slide where the user has written on 20 the friend's wall. 21 Q. Go to PTX-942 with Bates Number 22 LTT 157101? 23 A. That is correct. Correct. 24 So this case, for example, without</p>	<p>1 A. Yeah. 2 Q. What type of a claim is Claim 9? 3 A. This is a method claim. 4 Q. And when you say a method claim, 5 what are you referring to? 6 A. So it's a claim that describes how 7 certain procedures is performed through certain 8 steps. 9 Q. So Claim 1 was -- what type of 10 claim was Claim 1? 11 A. So Claim 1, it was describing 12 components of the server. This is more 13 describing a process that is followed to achieve 14 a certain goal. 15 Q. And have you formed an opinion as 16 to whether or not the Facebook website infringes 17 Claim 9 of the '761 patent? 18 A. Yes, I did. 19 Q. And what is your opinion? 20 A. And my opinion is that Facebook 21 infringes Claim 9. 22 Q. And what evidence did you rely 23 upon to form that opinion? 24 A. I relied upon help files, source</p>
Page 675	Page 677
<p>1 going through the source code, it's pretty easy 2 that I wrote, How are you in the second context. 3 And there is a direct association of that 4 content that I introduced in the second context 5 with my profile picture, which is the data that 6 I introduced in the first context. 7 So it is a pretty clear 8 association of the two. 9 Q. And based on the testimony you 10 provided about Claim 7 and the previous 11 testimony and evidence you provided, does that 12 support your opinion that Facebook's website 13 infringes Claim 7? 14 A. Yes. 15 Q. Could you put a check in the box 16 next to Claim 7? 17 MR. ANDRE: Your Honor, may I 18 approach the witness? I want to switch my 19 boards. 20 THE COURT: Yes, you may. 21 THE WITNESS: Can you guys see it? 22 BY MR. ANDRE: 23 Q. Dr. Vigna, I'd like to turn your 24 attention to Claim 9 of the '761 patent.</p>	<p>1 code, my own experience with the website, the 2 deposition of the employees of Facebook that 3 used the website routinely. 4 Q. Did you rely on the confidential 5 documents as well? 6 A. Yes. 7 Q. Let me direct your attention to 8 PTX-145. Dr. Vigna, are you familiar with this 9 document? 10 A. Yes. 11 Q. What is this document? 12 A. So this platform White paper that 13 describes how testing is performed when new 14 functionality is introduced on the website. And 15 I think that interesting -- yeah, that paragraph 16 is particularly interesting. It says that every 17 time that they want to add some functionality, 18 they have the engineers bang on that particular 19 piece of code in every way possible. 20 So this explains that they have 21 their own employees go through the steps of 22 performing particular actions such as fanning 23 the page or uploading a photo internally to make 24 sure that a functionality works correctly.</p>

1 Q. So does PTX-145 support your  
2 opinion that the Facebook employees actually  
3 practice the methods of Claim 9?

4 A. Yes.

5 MR. ANDRE: Your Honor, I'd like  
6 to move PTX-145 into evidence.

7 MS. KEEFE: No objection, Your  
8 Honor.

9 THE COURT: It's admitted.  
10 BY MR. ANDRE:

11 Q. Also, I'd like to turn your  
12 attention to PTX-1000. Dr. Vigna, are you --  
13 and I am sorry, let's go back to PTX-145 real  
14 quick. I'm sorry.

15 Dr. Vigna, go up to the top here.  
16 Is this a -- PTX-145, is this a confidential  
17 internal document of Facebook's wiki?

18 A. Yes.

19 Q. Thank you.

20 Now, let's go to PTX-1000.

21 Dr. Vigna, are you familiar with  
22 what's been marked as PTX-1000?

23 A. Yeah. It's the Statement of  
24 Rights and Responsibilities.

1 Q. And who is this directed to?

2 A. This is directed to users of the  
3 website.

4 Q. And if you scroll down this page  
5 just a little bit, you see all these you will,  
6 you will, you will and you will not?

7 A. Yes.

8 Q. Does that inform your opinion that  
9 Facebook directs or controls the actions of the  
10 users?

11 A. Yes.

12 Q. How does it do so?

13 A. Because it tells the user what  
14 they can and cannot do.

15 Q. Dr. Vigna, in your own personal  
16 experience, have you witnessed individuals  
17 posting to walls and/or uploading photographs?

18 A. Yeah. I mean, I do that routinely  
19 on my own Facebook page. So I've done it  
20 several times.

21 I've done it, for example, for  
22 preparing the exhibits, of course, that I showed  
23 you. I had to post things.

24 And I've witnessed many, many

1 times friends, students, colleagues performing  
2 those steps.

3 MR. ANDRE: Your Honor, I'd like  
4 to move PTX-1000 into evidence.

5 MS. KEEFE: No objection.

6 THE COURT: It's admitted.

7 BY MR. ANDRE:

8 Q. All right. Let's turn to the  
9 elements of Claim 9.

10 You notice there are four elements  
11 of this claim; is that correct?

12 A. That is correct.

13 Q. On the first claim element,  
14 creating data within a user environment. Do you  
15 see that?

16 A. Yes.

17 Q. Can you describe generally what  
18 that is referring to?

19 A. So this is describing a method for  
20 creating data, you know, sort of user  
21 environment by interacting with the platform  
22 using an application and the data that is  
23 exchanged as files and documents.

24 Q. And does Facebook inform its users

1 how to do this action?

2 A. Yeah. The Facebook provides when  
3 the users go to the website, for example, and  
4 perform the task of uploading a note, document  
5 or uploading a file in a form of a picture, they  
6 go through the steps of this method to achieve  
7 the goal of creating this data.

8 Q. Could you go to PTX-886?

9 Can you go to the how do I change  
10 my profile picture? Is that an example of how  
11 Facebook instructs or directs its users how to  
12 upload a photo?

13 A. Yeah. These are help files that  
14 clearly describe to users how to perform series  
15 of tasks in order to achieve a particular goal.  
16 In this case, to add or change a profile  
17 picture.

18 Q. And Dr. Vigna, based on this  
19 document and the previous testimony you provided  
20 regarding this subject, do you have an opinion  
21 as to whether or not the Facebook website  
22 infringes the first element of Claim 9?

23 A. I do.

24 Q. And what's your opinion?

1 A. That it infringes.  
 2 Q. Would you put a check in the box  
 3 next to Claim 9, the first element?  
 4 MR. ANDRE: Your Honor, I'd like  
 5 to move PTX-886 into evidence.  
 6 MS. KEEFE: No objection.  
 7 THE COURT: It's admitted.  
 8 BY MR. ANDRE:  
 9 Q. I'd like to turn to the second  
 10 claim element of Claim 9. Dr. Vigna, do you  
 11 have an opinion as to whether the Facebook  
 12 website infringes the second element of Claim 9?  
 13 A. Yes, I do.  
 14 Q. And what's that opinion?  
 15 A. That Facebook infringes that  
 16 element.  
 17 Q. Could you describe, generally  
 18 speaking, what this element is talking about?  
 19 A. So this is a method for  
 20 dynamically associating metadata with the data  
 21 where both the data and metadata are stored in a  
 22 storage component of the computing platform, and  
 23 the metadata includes information related to the  
 24 user, the data, the application and the user

1 environment.  
 2 Q. So is this similar to what you  
 3 talked about earlier today or yesterday?  
 4 A. Yes. What we have seen before is  
 5 that when a user, for example, uploads a  
 6 picture, there are a number of actions that are  
 7 generated because of these actions of the user.  
 8 And in particular, we have seen that we have  
 9 stored tracking information in the metadata and  
 10 this tracking information contains the user  
 11 information about the user, the data, the  
 12 application and the user environment.  
 13 Q. And could you --  
 14 MR. ANDRE: So I'd like to seal  
 15 the record at this point.  
 16 BY MR. ANDRE:  
 17 Q. Can you show the source code?  
 18 A. Yeah.  
 19 Q. Where this element found?  
 20 A. Yeah. So, for example, when we --  
 21 when we load the photo, this is actually the  
 22 context information that is stored in the  
 23 metadata. And in this particular -- in this  
 24 particular case, this is metadata that is stored

1 as context information.  
 2 And you can see, for example, that  
 3 there is the album ID, which would be the user  
 4 environment, a reference to the user, a  
 5 reference to the data. It would be linked to a  
 6 source, which is the data, and when the data was  
 7 created, which is information that is captured  
 8 by the application saying, You uploaded this  
 9 information at this time in this application.  
 10 MR. ANDRE: You can take that  
 11 down. We can unseal the record, Your Honor.  
 12 BY MR. ANDRE:  
 13 Q. Based on that portion of the  
 14 source code, as well as other previous testimony  
 15 you provided this morning and yesterday  
 16 afternoon related to this topic, do you have an  
 17 opinion as to whether Facebook's website  
 18 infringes the second element of Claim 9?  
 19 A. Yes. My opinion is that Facebook  
 20 infringes that element.  
 21 Q. Would you please put a check in  
 22 the box next to the second element of Claim 9?  
 23 Turn to the third element of Claim  
 24 9. Dr. Vigna, have you formed an opinion as to

1 whether the Facebook website infringes the third  
 2 element of Claim 9?  
 3 A. Yes, I do.  
 4 Q. And what's your opinion?  
 5 A. My opinion is that Facebook  
 6 infringes this particular element.  
 7 Q. Okay. Could you generally  
 8 describe what is being referred to in the third  
 9 element of Claim 9?  
 10 A. So I'm sure that we're all  
 11 familiar with this at this point, but this is  
 12 about tracking the movement of the user from the  
 13 first environment of the first computing  
 14 platform to a second environment. And as the  
 15 user decides to move from its own profile, its  
 16 own profile to the profile of friend, for  
 17 example.  
 18 Instructions are executed to track  
 19 the user from one environment to another.  
 20 Q. We'll turn to PTX-920, please.  
 21 Dr. Vigna, are you familiar with  
 22 this exhibit?  
 23 A. Yeah.  
 24 Q. And what type of document is this?

Page 686

1 A. It's a help file.  
 2 Q. If you go down, scroll down the  
 3 page a little bit where it says how to publish  
 4 right here.  
 5 Dr. Vigna, does what's in Exhibit  
 6 PTX-920 support your opinion regarding the third  
 7 element of Claim 9?  
 8 A. Yeah. In a way tells the user  
 9 that they can go to another profile, move to  
 10 another user and, for example, publish  
 11 information on their wall.  
 12 Q. And how does that support your  
 13 opinion about the tracking?  
 14 A. That it is actually infringing.  
 15 Q. And just so we're clear, what  
 16 exactly is a help file?  
 17 A. So a help file is information that  
 18 is publicly available that helps users perform  
 19 certain actions and directs them or encourages  
 20 them to perform certain operations.  
 21 MR. ANDRE: Your Honor, I would  
 22 like the move PTX 920 into evidence.  
 23 MS. KEEFE: No objection.  
 24 THE COURT: It's admitted.

Page 687

1 BY MR. ANDRE:  
 2 Q. And based on this document, the  
 3 source code you have shown us and the various  
 4 other evidence you have shown us in the last two  
 5 days, does that support your opinion that  
 6 Facebook infringes the third element of Claim 9?  
 7 A. My opinion is that Facebook  
 8 infringes that element.  
 9 Q. Would you put a check in the third  
 10 element box.  
 11 A. (Witness complying.)  
 12 Q. Turn to the fourth element of  
 13 Claim 9.  
 14 Dr. Vigna, do you have an opinion  
 15 as to whether or not the Facebook website  
 16 infringes the fourth element of Claim 9?  
 17 A. Yes.  
 18 Q. What is your opinion?  
 19 A. That Facebook infringes that  
 20 particular claim element.  
 21 Q. And could you generally describe  
 22 what we're talking about in the fourth element  
 23 of Claim 9?  
 24 A. Yeah. So here we're talking about

Page 688

1 how metadata is dynamically updated with an  
 2 association of the data, the application and the  
 3 second user environment when the user employs a  
 4 left one of the application and the data from  
 5 the second environment.  
 6 Q. So this is worded a little  
 7 differently than Claim 1. Can you generally  
 8 describe how this dynamically updating the  
 9 stored metadata occurs in Claim 9?  
 10 A. Yeah. In this particular case  
 11 it's, you know, it's a variation in a way on the  
 12 concept. The idea is that whenever the user  
 13 okay, employs one application and the data from  
 14 the second environment, whenever that is used,  
 15 for example, the user uploads the picture from  
 16 his album to the new album. The metadata is  
 17 updated automatically with that association of  
 18 the second user environment, the data and the  
 19 application.  
 20 Q. Thank you.  
 21 And could you show us in the --  
 22 MR. ANDRE: I'm sorry, Your Honor.  
 23 We have to close the record.  
 24 Q. Could you show us in the source

Page 689

1 code where we would find the element of Claim 4,  
 2 of Claim 9?  
 3 A. Yeah.  
 4 Q. Let me put that in English this  
 5 time. Could you show us in the source code  
 6 where we would find the fourth element of Claim  
 7 9?  
 8 A. Okay. So, for example, again,  
 9 going to the case of uploading the picture, we  
 10 have seen that a number of files are executed,  
 11 and when upload photos is executed, eventually  
 12 the -- I might even have it here. No, that's a  
 13 new file. Sorry.  
 14 So the picture -- the file  
 15 executed is /lib/feed/stories/add/insert.php.  
 16 And you can see, for example, that in this  
 17 particular case, the metadata in the form of a  
 18 tracking story that says this user has been  
 19 writing on the wall of another user -- I'm  
 20 getting tired, too -- it contains references to  
 21 the second user environment, and in case this  
 22 will be, for example, this user I.D. will be the  
 23 user on which you wrote, on whose wall you wrote  
 24 the message. So it's the reference of the

Page 690

1 second environment. There are reference to the  
 2 application, for example, the story type.  
 3 And there are references to the  
 4 data, for example, the data story, database I.D.  
 5 And there are actual reference to the user in  
 6 the first place as the actor I.D.  
 7 Q. And does that support your opinion  
 8 that the fourth element of Claim 9 is infringed  
 9 by the Facebook website?  
 10 A. Yes.  
 11 Q. And based on that --  
 12 MR. ANDRE: Your Honor, we can  
 13 unseal the record.  
 14 THE COURT: Okay.  
 15 BY MR. ANDRE:  
 16 Q. Based on that portion of the  
 17 source code and your previous testimony  
 18 regarding this topic, do you have an opinion as  
 19 to whether the Facebook website infringes the  
 20 fourth element of Claim 9?  
 21 A. Yes, I do.  
 22 Q. What is that opinion?  
 23 A. It is that it infringes.  
 24 Q. Would you put a check in the box,

Page 691

1 please.  
 2 A. Yes. (Witness complying.)  
 3 Q. Dr. Vigna, in your opinion, does  
 4 Facebook encourage or participate with  
 5 developers and users in the infringement of  
 6 Claim 9?  
 7 A. Yes.  
 8 Q. Have you ever created an  
 9 application to run the Facebook website?  
 10 A. Yes, I did.  
 11 Q. And when you created that  
 12 application, what documents did you use to  
 13 create it?  
 14 A. I used public documents of  
 15 Facebook that describe the API of the Facebook.  
 16 Q. What is API again?  
 17 A. Can I stop for a second and go to  
 18 the board?  
 19 Q. Sure.  
 20 A. So it's sort -- so the idea is  
 21 that if you look at Facebook sort of like an  
 22 entity here. Facebook will offer to third party  
 23 the ability to access all kind of data that is  
 24 managed by Facebook. And it does this by

Page 692

1 providing a series of -- they're really, you  
 2 know, commands in a way, that you can send to  
 3 Facebook to get information that is stored  
 4 within Facebook.  
 5 So, for example, I can say please  
 6 give me all the users of John Vineyard, and they  
 7 say, okay, here are all the users.  
 8 Tell me what John Vineyard has  
 9 been doing recently. And Facebook goes into his  
 10 own data, the metadata or the stored pictures or  
 11 whatever information is requested, gathers this  
 12 information and sends it back.  
 13 All this possible operation that  
 14 Facebook allows you to do from the outside, all  
 15 these together compose an API. So you can see  
 16 that it's an application programming interface.  
 17 So the idea is that it interfaces  
 18 developers with the content of Facebook. So  
 19 this is an interface. It's something that  
 20 allows you to interact with the content that is  
 21 stored on Facebook. And of course, it's an  
 22 application programming into Facebook because  
 23 these requests are actually made by an  
 24 application.

Page 693

1 An application is nothing but a  
 2 code that performs some operations. So what I  
 3 did as part of, you know, understanding what  
 4 Facebook was doing and what operations were  
 5 possible and what data was collected and was  
 6 available to third parties, I developed an  
 7 application of mine, a very simple application,  
 8 and I tested what information could be accessed.  
 9 And, for example, I performed, for  
 10 example, an upload of a photo. I performed from  
 11 my application the ability to write on the wall  
 12 of another user. So this API is a way in which  
 13 Facebook allows other people to perform actions  
 14 on their site and execute steps of the method.  
 15 Q. And just to give by way of example  
 16 some of the more popular third-party  
 17 applications like FarmVille and Mafia Wars and  
 18 those type of stuff?  
 19 A. Yeah, those are applications that  
 20 are typically integratable to Facebook. From my  
 21 application there are only two users.  
 22 Q. And are the APIs that Facebook  
 23 publishes for the third-party developers, are  
 24 those specific to Facebook?