

EXHIBIT 6

UNREDACTED VERSION OF DOCUMENT SOUGHT TO BE LODGED UNDER SEAL

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SUPERIOR COURT OF CALIFORNIA

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COUNTY OF SAN MATEO

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SIX4THREE, LLC, a Delaware limited :

6

liability company, :

7

Plaintiff : Case No.:

8

v. : CIV 533328

9

FACEBOOK, INC., a Delaware :

10

Corporation and DOES 1 through 50, :

11

Inclusive :

12

Defendants :

13

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15

Videotaped Deposition of BERNARD HOGAN, Ph.D.

16

Washington, D.C.

17

Wednesday, July 26, 2017

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12:47 p.m.

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Job No.: BO-132111

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Pages 1 - 346

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Reported by: Melissa Mandell

1 SUPERIOR COURT OF CALIFORNIA
2 COUNTY OF SAN MATEO
3
4 SIX4THREE, LLC, a Delaware)
5 limited liability company,)
6)
7 Plaintiff,)
8)
9 v.) Case No. CIV 533328
10 FACEBOOK, INC., a Delaware)
11 corporation and DOES 1)
12 through 50, inclusive,)
13)
14 Defendants.)
15 _____)
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22 ***CONFIDENTIAL***

23 Videotaped deposition of BERNARD HOGAN, PH.D.

24 (Volume II, pages 347 - 469 inclusive)

25 London, England

Thursday, October 26, 2017

Reported by:
Leah Willersdorf,
ACR, MBIVR, QRR2,
International Participating
Member NCRA.

Job No. 10036637

1 paragraph -- or number eight on that page. Do you 01:37:36
2 recall that? 01:37:38

3 A. Yes. 01:37:39

4 Q. So what did you understand paragraph eight 01:37:39
5 to mean? 01:37:42

6 MS. MEHTA: Objection; foundation, calls 01:37:44
7 for a legal conclusion, purports to call for expert 01:37:45
8 opinion from a lay witness, irrelevant. 01:37:49

9 A. So when I was developing applications on 01:37:52
10 Facebook, part of that required me to sort of look 01:37:56
11 at Facebook's code. There are things called 01:37:59
12 packages, for example. Packages are ways in which 01:38:03
13 we can use a programming language. I had previously 01:38:07
14 identified I teach one called Python. So there's a 01:38:10
15 Python package for -- that helps you access Facebook 01:38:14
16 data. You submit the appropriate credentials and 01:38:18
17 then you can get the appropriate data. Facebook had 01:38:22
18 offered some various code and endpoints on their 01:38:26
19 websites. I understood this to mean that if they 01:38:31
20 had offered it for me to use as a developer, then I 01:38:36
21 could use it as a developer. 01:38:40

22 Q. Earlier in the deposition, you made 01:38:42
23 reference to something called FQL. Do you recall 01:38:44
24 that? 01:38:47

1 So Graph Search seemed like it would be a 01:53:26
2 way to simplify this task of querying Facebook for 01:53:29
3 this data and showing that data to the user. 01:53:32

4 Q. You testified a few minutes ago regarding 01:53:36
5 limitations on the amount of data that could be 01:53:42
6 queried. Do you recall that? 01:53:46

7 A. Yes, I do. 01:53:49

8 Q. Is there a technical term for that that 01:53:49
9 you're familiar with? 01:53:52

10 A. Oh you're -- are you -- 01:53:53

11 MS. MEHTA: Objection -- hold on. 01:53:54

12 THE WITNESS: Oh, I'm sorry. 01:53:56

13 MS. MEHTA: Objection; calls for 01:53:57

14 speculation, foundation, purports to call for expert 01:53:57
15 testimony from a lay witness. Now you can go ahead. 01:54:00

16 A. So I had originally -- or I had previously 01:54:05
17 spoke about the fact that you could only get 5,000 01:54:08
18 friendships back from a single query. That's a kind 01:54:13
19 of limiting. So you can limit the data -- or data 01:54:16
20 is limited by a platform in a number of different 01:54:20
21 ways, but mainly it's volume and velocity. So 01:54:23
22 volume is limiting how much data the developer or 01:54:30
23 the developer's application -- sorry -- volume is 01:54:36
24 how much data the application can receive. Velocity 01:54:40

1 is how fast -- velocity is how fast the data can be
2 queried.

3 So 5,000 is an example of volume. You can
4 only receive so much data per query. Velocity is
5 how many queries you can make under a specific time
6 period, and that's call rate limiting. So a lot of
7 platforms have rate limiting baked in and we
8 commonly consult documents to see what that rate
9 limiting is. Twitter, for example; if you wanted to
10 get friendships from Twitter, that's the get friends
11 permission, and you can only query that, I believe,
12 180 times every 15 minutes. And so after you've
13 queried it 180 times -- say, give me the first set
14 of friends, give me the second batch of friends,
15 give me the third batch of friends -- once you get
16 to 180, you have to stop and wait until your 15
17 minutes are up and then continue. Facebook have
18 rate limiting as well, although I do not recall any
19 specific document from Facebook that stipulated
20 precisely their rate limiting. But I do know that
21 they do rate limit and that we had to ensure that
22 our program did not ask Facebook too quickly for
23 data or else no data would be returned.

24 MS. MEHTA: Objection; move to strike,

1 nonresponsive.

01:56:19

2 Q. Does the -- or did the Facebook Statement
3 of Rights and Responsibilities have anything, any
4 provisions in it regarding rate limiting?

01:56:21

01:56:23

01:56:27

5 MS. MEHTA: Objection --

01:56:31

6 A. I don't --

01:56:33

7 MS. MEHTA: Hold on. Objection; vague,
8 foundation, calls for speculation, purports to call
9 for expert testimony from a lay witness, and
10 irrelevant.

01:56:33

01:56:33

01:56:37

01:56:40

11 A. I don't recall the phrase rate limiting in
12 the Statement of Rights and Responsibilities, but I
13 do know that in the Statement of Rights and
14 Responsibilities they do refer to limiting. Whether
15 that refers to the volume of data or the velocity of
16 data or both, I don't know.

01:56:44

01:56:46

01:56:50

01:56:51

01:56:54

01:57:00

17 Q. And do you still have Exhibit 1 in front
18 of you?

01:57:04

01:57:07

19 A. I do.

01:57:07

20 Q. Is it open to page 21?

01:57:09

21 A. Oh, yes.

01:57:10

22 Q. And again on the previous page 20, this is
23 section nine entitled Special Provisions Applicable
24 to Developers/Operators of Applications and

01:57:13

01:57:17

01:57:22

1 Websites, correct? 01:57:25

2 A. Uh-huh. 01:57:26

3 Q. And then on page 21, number nine up there 01:57:27

4 at the top states, "we can limit your access to 01:57:30

5 data." Do you see that? 01:57:33

6 A. Yes. 01:57:35

7 Q. What is your understanding or what was 01:57:37

8 your understanding of what that meant when you read 01:57:37

9 it the first time? 01:57:40

10 MS. MEHTA: Hold on. Objection; vague, 01:57:42

11 foundation, calls for speculation, calls for a legal 01:57:43

12 conclusion, expert testimony from a lay witness, and 01:57:47

13 irrelevant. 01:57:49

14 A. When I read that phrase, which was 01:57:53

15 important to me because I obviously wanted to abide 01:57:55

16 by the rights and responsibilities -- I didn't want 01:57:59

17 them to, you know, revoke my access or restrict my 01:58:02

18 access -- I assumed that that meant that they can 01:58:09

19 either limit -- as in give me only so much data -- 01:58:15

20 in terms of volume or rate limit, as in only give it 01:58:19

21 to me so fast. 01:58:24

22 Q. And what is it about that sentence that 01:58:25

23 led you to believe that that's what it meant? 01:58:31

24 MS. MEHTA: Same objections. 01:58:35

1 A. Nothing really. I mean, the word limit is 01:58:36
2 there, but also it's not the sentence that gave me 01:58:39
3 that impression. It's the fact that I 01:58:42
4 download social network data from a variety of 01:58:44
5 sources and that I was interpreting this in line 01:58:48
6 with the similar statements from Twitter or LinkedIn 01:58:52
7 or other platforms -- Reddit, for example -- that 01:58:56
8 also limit data in specific ways. 01:59:00

9 Q. Did the word limit have particular 01:59:04
10 significance to you? 01:59:07

11 MS. MEHTA: Same objections, asked and 01:59:09
12 answered. 01:59:10

13 A. You mean, to the extent that it made me 01:59:12
14 think of rate limiting or limiting by volume? 01:59:16

15 Q. Did you understand when you read this 01:59:20
16 sentence that we're talking about that it gave 01:59:21
17 Facebook the right to terminate access to data at 01:59:25
18 some period in time? 01:59:31

19 MS. MEHTA: Same objections. 01:59:33

20 A. So not in this statement. This statement 01:59:34
21 to me seems like -- that they could slow down data. 01:59:37
22 And also as my work evolved and I'm sort of using 01:59:40
23 Facebook more for more kinds of data, that just 01:59:48
24 reinforced my understanding of that. So the fact 01:59:54

1 that they said, we'll only give you 5,000 01:59:58
2 friendships at a time, or that you can only do, I 02:00:01
3 believe, 60 queries in 60 seconds. I think that's 02:00:04
4 their rate limit. I don't -- I can't confirm that. 02:00:08
5 But that's -- so the fact that they had limited data 02:00:12
6 in some ways and that they said that they limit 02:00:15
7 access to data, that just seemed to make sense to 02:00:20
8 me. 02:00:24

9 Q. At any point in time, say, up until the 02:00:24
10 date of this document, which is December of 2012, 02:00:29
11 did you have an understanding that Facebook was 02:00:33
12 reserving the right to cut off access to data 02:00:37
13 completely? 02:00:41

14 MS. MEHTA: Same objections. 02:00:43

15 A. I do not know if I had read anywhere in 02:00:46
16 particular that that's the case, but I had assumed 02:00:49
17 that if you did not abide by these terms and 02:00:52
18 conditions, they would revoke your developer key. 02:00:55
19 The developer key is what allows you to talk to 02:00:59
20 Facebook. And so I had assumed that at some point, 02:01:02
21 if you don't abide by these conditions, they would 02:01:03
22 revoke that. 02:01:07

23 Q. What was your understanding if you did 02:01:09
24 abide by their rules and regulations? 02:01:11

1 MS. MEHTA: Same objections. 02:01:15

2 A. That I would -- that developers would be 02:01:16
3 treated fairly, that they would be able to access 02:01:19
4 the data that is stipulated by Facebook as being 02:01:21
5 accessible. 02:01:26

6 Q. And you've testified a little bit about 02:01:29
7 two apps that you developed. What were the names of 02:01:33
8 those apps? 02:01:38

9 A. One is call NameGenWeb and that's -- the 02:01:39
10 reason it's called that is because in social network 02:01:42
11 analysis, the technique for eliciting friendships is 02:01:47
12 called a name generator. And so I'd say, how many 02:01:51
13 people do you know? How many people do you know 02:01:55
14 that are important to you? That's a name generator 02:01:57
15 question. So this being an online version of that, 02:02:00
16 I called it NameGenWeb. 02:02:03

17 The other application is called College 02:02:07
18 Connect, and that's because it's about connecting 02:02:08
19 people to their friends in such a way that they 02:02:15
20 could learn more about colleges. 02:02:19

21 Q. Just to put a timeframe on this, 02:02:22
22 approximately when did you develop NameGenWeb? 02:02:24

23 A. So NameGenWeb started in -- definitely at 02:02:28
24 least in 2008. While I was still at the University 02:02:32

1 it as? 02:06:50

2 MS. MEHTA: Objection; foundation, 02:06:51

3 speculation. 02:06:51

4 A. So I'm not entirely sure if your mean this 02:06:54

5 but -- 02:06:58

6 Q. Let me ask a different question. 02:06:59

7 A. Sure. 02:07:00

8 Q. Are you familiar with something call Graph 02:07:00

9 API Version 2? 02:07:02

10 A. Two, yes. 02:07:05

11 MS. MEHTA: Objection; leading. 02:07:06

12 A. I am familiar with Graph API Version 2. 02:07:07

13 Q. And what is your understanding of what 02:07:09

14 Graph API Version 2 or 2.0 is? 02:07:11

15 MS. MEHTA: Objection; foundation, 02:07:15

16 speculation, purports to call for expert testimony 02:07:15

17 from a lay witness, and irrelevant. 02:07:19

18 A. So what they announced in 2014 was Graph 02:07:22

19 API 2.0. Previously, when I was discussing a change 02:07:27

20 in 2010, that was Graph API 1.1. Graph API 2.0 is 02:07:31

21 the change or the ensemble of changes to the way 02:07:38

22 that a application can talk to Facebook that led to 02:07:43

23 the sort of way I couldn't do my work anymore. 02:07:47

24 Q. And just so that the record is clear, can 02:07:52

1 you explain, what was it about this announcement 02:07:55
2 that caused you not to be able to do your work 02:07:59
3 anymore? 02:08:02

4 MS. MEHTA: Objection; assumes facts not 02:08:03
5 in evidence and same objections as prior. 02:08:05

6 A. The announcement didn't prevent me from 02:08:08
7 doing my work. The changes prevented me from doing 02:08:12
8 my work. They happened a year later. So I still 02:08:13
9 had one year where both NameGenWeb was available and 02:08:16
10 College Connect was available. But the changes, 02:08:22
11 when they happened, they prevented me from accessing 02:08:24
12 friendship relations on behalf of a user. 02:08:30

13 Q. And what changes took effect in April of 02:08:34
14 2015? 02:08:38

15 A. So in April of 2015, that was the changes. 02:08:38
16 First of all, it required the get friends 02:08:42
17 permission, but that's okay. We could have, you 02:08:44
18 know, just added that permission in if it gave the 02:08:47
19 equivalent data, but it did not give the equivalent 02:08:51
20 data. Instead, it only gave data about friends that 02:08:54
21 also authorized an application. 02:08:58

22 So as an example, you could see -- so 02:09:00
23 let's say I want to make a wedding planner. Before, 02:09:04
24 you could, say, have a whole list of a person's 02:09:08

1 friendships and then you could select which one's 02:09:13
2 going to be the photographer, which ones' going to 02:09:15
3 be the bridesmaids, and which ones are invited or 02:09:17
4 not invited. Now, if you wanted to do a wedding 02:09:21
5 planner, you would have to say, hey, every single 02:09:24
6 one of my friends on Facebook, please add this 02:09:28
7 application so that I can make a wedding planner. 02:09:31

8 Q. Why is that a problem? 02:09:36

9 MS. MEHTA: Objection; purports to call 02:09:38
10 for expert opinion from a lay witness, irrelevant, 02:09:39
11 foundation, speculation. 02:09:41

12 A. For the case of a wedding planner, it 02:09:45
13 would be a minor inconvenience perhaps. It would 02:09:48
14 slow the app down. It would make it somewhat 02:09:55
15 inconvenient. In my case, where I'm trying to show 02:09:57
16 all of a user's friends or almost all of a user's 02:10:02
17 friends back to that user, there is no reasonable 02:10:04
18 way that I would be able to spam a user's friends to 02:10:08
19 say, you should also add this application so that 02:10:14
20 your friend can visualize their social network. 02:10:18
21 It's just a sort of interaction that's not very -- 02:10:21
22 not very common, not very meaningful. Just it's 02:10:24
23 something that would be inappropriate. 02:10:30

24 Facebook have themselves tried to prevent 02:10:33

1 spamming on their site. There was a time, say five 02:10:36
2 years ago, when companies like Zynga, who owned 02:10:39
3 Farmville, would post all sorts of Farmville 02:10:44
4 invitations on a person's wall. And that was 02:10:48
5 considered very distasteful and most people did not 02:10:52
6 like that. So employing that practice would only 02:10:55
7 inhibit my work either because Facebook would 02:10:59
8 perceive it as spamming or because people in a 02:11:04
9 person's social network would consider it as 02:11:07
10 inappropriate. 02:11:09

11 Q. And so what happened on April -- was it 02:11:11
12 April 30th, 2015? 02:11:14

13 A. I believe it was -- 02:11:18

14 MS. MEHTA: Objection; vague and prior 02:11:18
15 objections. 02:11:20

16 A. Yes. 02:11:20

17 Q. What happened on April 30th, 2015 with 02:11:22
18 respect to your two apps, NameGenWeb and College 02:11:27
19 Connect? 02:11:29

20 MS. MEHTA: Objection; calls for expert 02:11:31
21 opinion from a lay witness, vague, and irrelevant. 02:11:31

22 A. So approximately April 30th, 2015, if I 02:11:36
23 was to query Facebook for the friendships of an 02:11:41
24 individual or -- I mean, I'm not querying it. My 02:11:47

1 application is querying it on behalf of a user. If 02:11:50
2 my application is querying Facebook, it would return 02:11:51
3 no data. Facebook had notified myself and other 02:11:56
4 developers of this through a thing called Breaking 02:12:03
5 Changes. And so we were well aware of the fact that 02:12:06
6 our app would no longer work because our app used 02:12:11
7 queries that would no longer function. 02:12:14

8 MR. GODKIN: Let me now ask the court 02:12:18
9 reporter to mark as Exhibit Number 2 this document. 02:12:20

10 (Exhibit 2 was marked for identification 02:12:44
11 and was attached to the transcript). 02:12:45

12 Q. Placed in front of you, we've marked as 02:12:45
13 Hogan Exhibit 2, Dr. Hogan. Can you identify Hogan 02:12:49
14 Exhibit 2? 02:12:51

15 A. Yes. This is a paper that I wrote for a 02:12:52
16 conference called Quantitative Methods in the Social 02:12:55
17 Sciences 2. This conference took place at the 02:13:00
18 University of Amsterdam and this was the paper that 02:13:03
19 I submitted which was a way of introducing the 02:13:07
20 ability to represent a person's social network via 02:13:13
21 Facebook. I use this -- in this paper, I describe 02:13:19
22 how certain connections, certain friendships in my 02:13:23
23 friendship network were more important to me, more 02:13:30
24 personally important and that they could be 02:13:34

1 identified through various statistical means that 02:13:37
2 are available to social network researchers. 02:13:45

3 Q. And if you turn to -- strike that. 02:13:53

4 What is the date of this publication? 02:13:58

5 A. This publication is not dated but it -- 02:14:01

6 Q. If you look at the second page. 02:14:04

7 A. Oh, well. Yeah, I was going to say it was 02:14:07
8 December 2nd, but it's actually -- yes, it says here 02:14:07
9 December 1st, 2008. 02:14:10

10 Q. Is this the first publication that you 02:14:11
11 authored concerning Facebook -- 02:14:15

12 MS. MEHTA: Irrelevant. 02:14:19

13 Q. -- or were there other ones? 02:14:19

14 MS. MEHTA: Irrelevant. 02:14:21

15 A. It's reasonable to assume that previous 02:14:23
16 publications that I have authored, particularly one, 02:14:26
17 a book chapter called "Using Information Networks to 02:14:30
18 Elicit Social Behavior" or something to that 02:14:35
19 nature -- it's in the book the Handbook of Online 02:14:40
20 Research Methods by Fielding, Lee, and Blank -- it's 02:14:43
21 reasonable to assume that I would have mentioned 02:14:50
22 Facebook in that document. But this is the first 02:14:53
23 document where I am doing research explicitly on 02:14:57
24 Facebook. 02:15:01

1 Q. At the time you wrote this article, do you 02:15:03
2 know approximately how many people were using 02:15:07
3 Facebook as a social network? 02:15:10

4 MS. MEHTA: Objection; foundation, calls 02:15:13
5 for speculation, purports to call for expert opinion 02:15:14
6 from a lay witness. 02:15:17

7 A. Approximately this time, I believe around 02:15:20
8 170 to 200 million people were -- had joined 02:15:25
9 Facebook. It may be more. 02:15:29

10 Q. On the second page of the article, there's 02:15:35
11 a Roman numeral three which is entitled Other 02:15:42
12 Network Data Available Through Facebook. Do you see 02:15:46
13 that? 02:15:50

14 A. Yes, I do. 02:15:50

15 Q. At then at the top of the second column, 02:15:51
16 item number one is photos. 02:15:52

17 A. Yes. 02:15:55

18 Q. Were photos a type of data that was made 02:15:56
19 available on the Facebook platform? 02:16:02

20 MS. MEHTA: Same objections. 02:16:05

21 A. Yes, that is the case. Photo data was 02:16:06
22 available, and you can see here I've discussed 02:16:07
23 various applications other than mine that have used 02:16:11
24 that data. 02:16:13

1 Q. And did you ever use photos in any of your 02:16:14
2 applications? 02:16:18

3 MS. MEHTA: Same objections. 02:16:21

4 A. I used profile photos in one of my 02:16:22
5 research endeavors. It was not by me in particular 02:16:25
6 but it was by a student I had mentored. 02:16:29

7 Q. And who was that student? 02:16:33

8 A. Her name was Nina Jones and she was a high 02:16:33
9 school student. I was approached in, I believe, 02:16:35
10 2011 by the BBC. They were running -- 02:16:39

11 Q. British Broadcasting Company? 02:16:44

12 A. Yes, by the British Broadcasting Company, 02:16:47
13 sort of a major broadcaster in the United Kingdom, 02:16:49
14 and they have both television channels -- BBC1, 02:16:53
15 BBC2 -- and radio stations -- Radio 1 and so forth. 02:16:58
16 Radio 4 is their station for like news, current 02:17:03
17 affairs, scientific programs, documentaries. Radio 02:17:08
18 4 was running a program called So You Want To Be A 02:17:12
19 Scientist, and people would apply to be a scientist. 02:17:15
20 It was a competition. The lady who won it found out 02:17:21
21 how far snails go before they can return -- before 02:17:25
22 they know -- to lose their way. 02:17:31

23 Nina was also in this competition and she 02:17:32
24 made it to the finals. Her project was analyzing 02:17:33

1 Facebook profile photos. So these profile photos, 02:17:38
2 she coded them for whether people were smiling, 02:17:43
3 whether there were even people in the photos, or 02:17:45
4 there were cartoons and so forth. And then we did 02:17:48
5 an analysis to reveal some features about these 02:17:50
6 photos. And so for example, we found that women 02:17:54
7 were more likely to smile in their photos than men. 02:17:56

8 Q. And were you her supervisor or mentor or 02:18:01
9 what were you? 02:18:05

10 A. I was her mentor through this. She was a 02:18:06
11 high school student. The purpose of this program 02:18:08
12 was to help laypeople who don't have an experience 02:18:11
13 or background in science to accomplish a scientific 02:18:15
14 proposal. 02:18:19

15 Q. Back at the sentence we were looking at -- 02:18:21
16 or the item regarding photos, you wrote, "Facebook 02:18:24
17 does not merely enable individuals to upload photos 02:18:27
18 but to tag these photos with other individuals who 02:18:30
19 are present in the photos." What was the 02:18:33
20 significance of that? 02:18:35

21 MS. MEHTA: Objection; vague, foundation, 02:18:40
22 speculation, and irrelevant. 02:18:41

23 A. Part of this work was to introduce the 02:18:51
24 opportunity to do research on Facebook and to 02:18:54

1 indicate -- partially to justify why I'm doing this. 02:19:00

2 At this point, people would say, why are you doing 02:19:04

3 work on Facebook? It's just an online website. 02:19:05

4 It's not important like real life, or something like 02:19:09

5 that. These days we tend to assume Facebook is a 02:19:10

6 part of real life. 02:19:15

7 So in that, I introduced not only the work 02:19:16

8 that I was doing but also to highlight other work 02:19:19

9 that was being done on Facebook. In academic work, 02:19:24

10 we call this part of our literature review. That 02:19:27

11 way, we have to show that we're part of a field and 02:19:31

12 not just doing whatever we feel like. Previously, 02:19:34

13 there was a paper that has used photos on Facebook 02:19:36

14 and used the fact that individuals could be 02:19:41

15 identified in photos on Facebook in order to 02:19:43

16 generate scientific insights. So the insight that 02:19:45

17 they generated in this paper, the insight that I 02:19:45

18 refer to, is the fact that you may have many 02:19:52

19 friendship relations, hundreds even, but people tend 02:19:56

20 to have many fewer people identified in their own 02:20:00

21 photos and that that was an interesting insight at 02:20:04

22 the time. 02:20:08

23 Q. And then turn if you would to page number 02:20:10

24 four of your article. 02:20:25

1 A. Okay, I see that, yes.

02:20:27

2 Q. You see that? And there's -- you have
3 section five entitled Employing the Facebook API.

02:20:28

02:20:30

4 A. Yes.

02:20:36

5 Q. And you state "the Facebook API is
6 designed to facilitate access to data about a user
7 and the user's friends." Can you explain what you
8 meant by that?

02:20:36

02:20:38

02:20:44

02:20:49

9 MS. MEHTA: Objection; irrelevant.

02:20:51

10 A. Well, that sentence means that -- or the
11 intent of me saying that is indicating that Facebook
12 have put in place a mechanism by which an
13 application can legitimately receive data from
14 Facebook. This is important to state because at the
15 time there were many questions about whether you
16 could access data from Facebook, first, and second
17 of all, what are the appropriate ways to do it. So
18 some people were trying to get data by, say,
19 photographing what's on the screen or downloading
20 what's on the screen, which is called screen
21 scraping. People were trying to use all sorts of
22 hacks to get into Facebook. But this I had
23 considered because it was based on the Statement of
24 Rights and Responsibilities and because it was so

02:20:54

02:21:00

02:21:04

02:21:07

02:21:12

02:21:15

02:21:18

02:21:21

02:21:24

02:21:27

02:21:31

02:21:35

02:21:38

02:21:42

02:21:43

1 clearly laid out that the Facebook API was the sort
2 of preferred way to get data.

3 Q. And then you go on in this paragraph to
4 talk about queries which we discussed earlier --

5 A. Yes.

6 Q. -- correct? And one of them -- you
7 mentioned FQL.

8 A. Uh-huh.

9 Q. Do you see that?

10 A. Yes.

11 Q. Which is a restricted variant of the
12 commonly used SQL; correct?

13 A. Uh-huh.

14 Q. You need to say yes or no.

15 A. Yes.

16 Q. Sorry, Dr. Hogan. And then you drop a
17 footnote, "Special thanks are extended to Cameron
18 Marlow for providing guidance on this query." Do
19 you see that?

20 A. Yes, I see that.

21 Q. Now, is that the same Cameron Marlow that
22 you testified about earlier --

23 A. That is correct.

24 Q. -- who worked for Facebook?

1	A. At that time, he was indeed working for	02:22:35
2	Facebook.	02:22:37

3	Q. And you contacted him to get information	02:22:38
4	about how to improve your queries?	02:22:41

5	MS. MEHTA: Objection; asked and answered,	02:22:45
6	irrelevant.	02:22:46

7	A. I contacted Cameron Marlow telling him	02:22:47
8	that I was, you know, exploring how to represent a	02:22:53
9	network on Facebook and that I was using the get	02:22:55
10	friends endpoint, that this was pretty slow. It	02:22:59
11	didn't make for a very appealing user experience.	02:23:03
12	At that point, you could say yes, get my friendship	02:23:07
13	network and you'd have to wait like, you know, half	02:23:11
14	an hour or an hour. This way sped it up	02:23:13
15	considerably, down to less than a minute. That was	02:23:17
16	provided by him. It did not work. He -- it's worth	02:23:24
17	noting that he said to me, as I recall -- although I	02:23:29
18	cannot provide the email; I assume it's --	02:23:34
19	there's -- I don't have a record of it but I'm	02:23:36
20	assuming maybe he might -- that he said this might	02:23:39
21	work.	02:23:44

22	It turns out that did not work as	02:23:45
23	intended, that -- because of the 5,000 limit, the	02:23:48
24	fact that you can only get 5,000 friends. So I had	02:23:52

1 to modify this query slightly. In later 02:23:56
2 presentations, I have presented a modified version 02:24:00
3 of this query. However, I would not have arrived at 02:24:03
4 that modified version had I not seen this initial 02:24:07
5 query. The query is quite funny looking and it's 02:24:11
6 that funny bit about select in, select where, select 02:24:15
7 stuff which I was not an expert on, and that was 02:24:18
8 what really helped. It made a material difference 02:24:23
9 in my capacity to download these friendship 02:24:26
10 relations. 02:24:28
11 MS. MEHTA: Objection; move to strike, 02:24:30
12 nonresponsive. 02:24:31
13 Q. And then if you turn to page six of this 02:24:32
14 publication, there's a Figure 1. 02:24:35
15 A. Yes. 02:24:38
16 MR. GODKIN: And then let me ask the court 02:24:40
17 reporter to mark as Exhibit 3 this document. 02:24:41
18 (Exhibit 3 was marked for identification 02:24:42
19 and was attached to the transcript.) 02:24:42
20 Q. And can you identify Exhibit 3? 02:25:02
21 A. Yes. Exhibit 3 is a -- this is a visual 02:25:06
22 representation of my social network, which is to say 02:25:09
23 those things I was talking about earlier, dots and 02:25:14
24 lines. Each dot represents a person and the lines 02:25:17

1 represent the friendships between those people. 02:25:21
2 This is a visualization of my social network that 02:25:24
3 uses certain technical principles in order to kind 02:25:28
4 of group people together. And in doing so, it makes 02:25:34
5 the visualization sort of tidy and helps me identify 02:25:38
6 clusters of people, such as one cluster, which is -- 02:25:43
7 say, that's my high school friends and they're all 02:25:46
8 connected to each other, and my family and they're 02:25:48
9 all connected to each other. 02:25:49

10 Q. And Exhibit 3 is the same as Figure 1 in 02:25:52
11 the article, Exhibit 2; is that right? 02:25:56

12 A. This is correct. It is a -- just a -- 02:25:59
13 simply it's just a larger version of that one. 02:26:00

14 Q. And what is the significance of the lines 02:26:04
15 going between the clusters? 02:26:07

16 A. So each line in this document represents a 02:26:09
17 friendship. So this would be one person here -- 02:26:14
18 that's my partner, and that right there -- and I met 02:26:18
19 my partner during undergraduate, and that's high 02:26:20
20 school. And so my partner knows people that I know 02:26:23
21 from high school, but my partner knows lots and lots 02:26:27
22 of people in undergraduate and also knows some 02:26:30
23 people in graduate school and so forth. So each 02:26:31
24 line is a friendship on Facebook that creates this 02:26:35

1 picture. 02:26:38

2 Q. It's a connection, if you will? 02:26:39

3 A. It is explicitly the friendship that you 02:26:42
4 get between two people on Facebook if you request to 02:26:48
5 be someone's friend and then they accept. That 02:26:51
6 connection can signify all sorts of things. It 02:26:56
7 could be a relationship -- people can befriend other 02:27:00
8 people because they want to appear popular or 02:27:04
9 because they feel social pressure. I can't tell you 02:27:05
10 the reasons why any two people are friends here, but 02:27:08
11 I can tell you that the connections themselves are 02:27:12
12 the data that comes from Facebook. 02:27:14

13 Q. And does Exhibit 3 represent the Facebook 02:27:20
14 data before or after April 30th, 2015? 02:27:26

15 A. Oh, this represents the sort of -- so this 02:27:35
16 is what I was referring to earlier. In this 02:27:37
17 document, you might see that -- and it's beforehand. 02:27:39
18 Before April 30th, all these people and their 02:27:43
19 friendship relations would be accessible to the 02:27:47
20 user. This is me. This is my friendship relations. 02:27:51
21 Every one of these people have been aware of this 02:27:52
22 document. I have posted versions of this on my 02:27:56
23 Facebook wall. My friends have commented on it and 02:28:01
24 so forth. After April 30th, I would have to ask 02:28:02

1 every single one of these people to add an 02:28:05
2 application just so I could make a picture like 02:28:08
3 this, and realistically that would never happen. 02:28:12

4 Q. Put that aside. 02:28:17

5 Have you ever visited Facebook's offices? 02:28:23

6 A. I have. 02:28:31

7 Q. And what was the -- strike that. 02:28:33

8 When did that happen? 02:28:33

9 A. That happened twice. The first time that 02:28:36
10 happened was when I was at a -- that happens -- 02:28:37

11 apologies, that happened three times. The first 02:28:43

12 time, I was -- it was probably 2012, 2013. I had 02:28:48

13 met with a user experience researcher named Paul 02:28:56

14 Adams and a researcher named Eytan Bakshy. We met 02:29:00

15 over lunch because I was in the area. 02:29:07

16 Paul Adams at the time was a user 02:29:10

17 experience researcher at Facebook who had used some 02:29:12

18 of my methodologies for capturing network data to do 02:29:15

19 pretests, particularly pretests when he was at 02:29:20

20 Google. And so he knew who I was and so he -- I 02:29:24

21 contacted him and he said, yeah, sure, come down to 02:29:28

22 Menlo. And I had lunch with him and Eytan. It was 02:29:32

23 the first time I had met Eytan Bakshy, but we had 02:29:35

24 previously been mutually aware of each other's work. 02:29:38

1 A. No.

02:55:10

2 Q. Did you ever get notice that College
3 Connect was in violation of any Facebook policies,
4 for example?

02:55:11

02:55:14

02:55:16

5 A. No.

02:55:19

6 Q. Did you ever get notices that Facebook had
7 received complaints regarding College Connect?

02:55:19

02:55:22

8 MS. MEHTA: Objection; irrelevant.

02:55:30

9 A. No.

02:55:30

10 Q. Okay. Can you estimate the amount of
11 money that was invested to create the app before you
12 learned that Facebook was turning off access to the
13 data?

02:55:31

02:55:35

02:55:39

02:55:44

14 MS. MEHTA: Objection; vague and also
15 irrelevant.

02:55:46

02:55:47

16 A. Well, the -- there is obviously the
17 initial hundred thousand dollars that was outlaid.
18 That was -- that did not pay for the amount of time
19 that the academics had put into it, their own time
20 paid at their rates. It did not take into account
21 the in-kind support of my department, my
22 department's IT team, the server infrastructure. So
23 on top of the hundred thousand which was used for
24 development efforts, our trip to Detroit for field

02:55:48

02:55:51

02:55:53

02:56:00

02:56:02

02:56:07

02:56:08

02:56:12

02:56:15

1 testing, our designer, there would probably be 02:56:19
2 another hundred thousand of in-kind support in terms 02:56:23
3 of time spent by myself and other colleagues on this 02:56:25
4 application. 02:56:29

5 Q. All right. Thank you. 02:56:31

6 MR. GODKIN: Let me ask the reporter to 02:56:32
7 mark as the next exhibit this document. This is 02:56:34
8 Hogan Exhibit 5. 02:56:36

9 (Exhibit 5 was marked for identification 02:56:54
10 and was attached to the transcript.) 02:56:55

11 Q. I've placed in front of you what's been 02:56:56
12 marked as Hogan Exhibit 5. Dr. Hogan, can you 02:56:59
13 identify this exhibit? 02:57:01

14 A. This appears to be a story on Facebook 02:57:05
15 describing the changes that happened when they 02:57:10
16 shifted towards Graph API 2.0. 02:57:14

17 Q. And what was the significance of this 02:57:19
18 announcement to the apps you had developed? 02:57:24

19 MS. MEHTA: Objection; lacks foundation 02:57:29
20 and also irrelevant. 02:57:30

21 A. This particular document, if -- as I 02:57:33
22 understand it, because it is describing the changes 02:57:36
23 in Graph API 2.0 and other subsequent changes -- 02:57:41
24 would indicate that there were changes to the API. 02:57:49

1 a heading, "A more stable platform with Versioning 03:01:26
2 and Graph API 2.0." Do you see that? 03:01:31

3 A. Uh-huh. 03:01:34

4 Q. Yes? 03:01:34

5 A. I see that, yes. 03:01:35

6 Q. And then it goes on to talk about 03:01:37
7 important new elements of Graph API 2.0 at the 03:01:42
8 bottom of the page. 03:01:43

9 A. That is -- I see that, yes. 03:01:45

10 Q. And then at the top of the next page, it 03:01:47
11 says, "In addition to the above, we were removing 03:01:50
12 several rarely used API endpoints; visit our 03:01:54
13 changelog for details." 03:01:58

14 A. Yes. 03:02:01

15 Q. Do you see that? 03:02:01

16 A. I see that. 03:02:03

17 MS. MEHTA: Objection; foundation. 03:02:03

18 MR. GODKIN: Okay. That he sees it? 03:02:06

19 MS. MEHTA: What -- the highlighting 03:02:08
20 that's on this version in gray -- 03:02:10

21 MR. GODKIN: I don't know. 03:02:11

22 MS. MEHTA: -- is that your highlighting 03:02:12
23 or is that original to the document? 03:02:13

24 MR. GODKIN: I can't answer that. 03:02:17

1 MS. MEHTA: Okay. I object to the use of 03:02:18
2 highlighted documents. This isn't the form in which 03:02:19
3 the document was produced. 03:02:21

4 BY MR. GODKIN 03:02:22

5 Q. Do you see any explanation of what the 03:02:26
6 several rarely used API endpoints are that appear on 03:02:30
7 this page of Exhibit 5? 03:02:36

8 MS. MEHTA: Objection; lacks foundation. 03:02:38

9 A. I do not see that stipulated here. I do 03:02:41
10 recall myself reviewing the changelog for the 03:02:43
11 details. 03:02:48

12 Q. And the changelog appears in Exhibit 5 -- 03:02:48

13 A. Oh, okay. 03:02:53

14 Q. -- farther back, does it not? 03:02:53

15 MS. MEHTA: Objection; lacks foundation. 03:02:55

16 A. Do you see the page with -- 03:02:57

17 A. Yes. 03:02:59

18 Q. -- page 80 at the bottom? It says 03:02:59
19 Facebook Platform Changelog at the top. Do you see 03:03:02
20 that? 03:03:04

21 A. I do see that, yes. 03:03:05

22 Q. And then if you turn -- well, what is a 03:03:07
23 changelog, in your understanding? 03:03:13

24 MS. MEHTA: Objection; purports to seek 03:03:15

1 expert testimony from a lay witness, lacks

03:03:17

2 foundation. It's also irrelevant.

03:03:19

3 A. So I look to the changelog because that's

03:03:21

4 where, as I understand it, applications, especially

03:03:24

5 Facebook, introduce new changes to the API. As I

03:03:28

6 have -- I had at that point been an app developer, I

03:03:33

7 would see in those changelog whether there was

03:03:41

8 anything of consequence to my applications. And so

03:03:43

9 for me, the changelog is a list of all those

03:03:47

10 changes. They're often very tedious.

03:03:49

11 Q. Did you review the changelog that appears

03:03:52

12 as part of Hogan Exhibit 5?

03:03:55

13 A. Yes. Well, I certainly recall reviewing

03:03:58

14 the changelog in version 2.0 on -- for example, they

03:04:03

15 do a lot of changes every time -- every time they

03:04:08

16 make any sort of new changes to Facebook. I do

03:04:14

17 unambiguously remembering reviewing this right here.

03:04:20

18 Q. Which page are you looking at?

03:04:26

19 A. I'm looking at page -- it says 91 at the

03:04:29

20 bottom of it.

03:04:31

21 Q. And -- all right -- what is it that causes

03:04:34

22 you to remember unambiguously that you reviewed this

03:04:36

23 one?

03:04:40

24 A. Unambiguously, I remember the -- under

03:04:41

1 Facebook Login at the center of the page, the second 03:04:45
2 and third bullets. "Friend list is no longer part 03:04:49
3 of the default permission set and has its own 03:04:53
4 permission." That's what I was describing earlier. 03:04:56
5 I also remember -- and this is the crucial one for 03:04:59
6 me -- "Friend list now only returns friends who also 03:05:01
7 use the app." Both of those are of material 03:05:05
8 consequence to my applications. 03:05:09

9 MS. MEHTA: Objection. 03:05:15

10 Q. In what regard? 03:05:15

11 MS. MEHTA: Objection; move to strike the 03:05:15
12 prior response as nonresponsive. Object to the 03:05:15
13 current question as seeking irrelevant information. 03:05:19

14 A. These two bullet points right here meant 03:05:24
15 that my applications, NameGenWeb and College 03:05:28
16 Connect, could no longer access a list of friends 03:05:32
17 and so therefore they could no longer represent 03:05:37
18 those friends to the user. They just couldn't work. 03:05:42

19 Q. If you move on to page -- with the number 03:05:45
20 93 at the bottom, there's a section entitled 03:05:52
21 Permissions. Do you see that? 03:05:56

22 A. Yes, I see that. 03:06:00

23 Q. And then at the very bottom, new 03:06:02
24 permissions in version 2.0. Do you see that? 03:06:03

1 A. Yes, I do.

03:06:06

2 Q. And then turn to the next page, page 94,
3 permissions no longer available in version 2.0. Do
4 you see that?

03:06:07

03:06:08

03:06:13

5 A. I do.

03:06:14

6 Q. Do you recall reviewing the permissions
7 that were no longer available in version 2.0?

03:06:14

03:06:17

8 A. I absolutely do.

03:06:20

9 Q. And did these -- did the removal of these
10 permissions have any significance to your apps?

03:06:22

03:06:25

11 MS. MEHTA: Objection; irrelevant.

03:06:30

12 A. So as I talked about earlier, College
13 Connect highlights which schools an individual user
14 on Facebook had gone to. So if you have a series of
15 friends on Facebook, you could see which -- see
16 which schools they went to. That would be, here,
17 the permission friends_education_history. The
18 friends_education_history permission that has been
19 removed was one that I had used in my applications.

03:06:31

03:06:34

03:06:37

03:06:42

03:06:44

03:06:49

03:06:57

03:07:00

20 Q. And so the removal of that permission is
21 one of the things that caused your app not to
22 function?

03:07:04

03:07:07

03:07:09

23 MS. MEHTA: Objection; relevance.

03:07:09

24 A. Along with the list of friends, yes.

03:07:10

1 Q. Did you ever contact anyone at Facebook 03:07:18
2 after you learned about these changes in version 03:07:22
3 2.0? 03:07:26

4 MS. MEHTA: Objection; relevance. 03:07:27

5 A. I did in fact contact people at Facebook. 03:07:30

6 Q. Who did you contact? 03:07:33

7 A. Well, I should say, when I later came in 03:07:36
8 contact with people at Facebook -- as I had stated 03:07:39
9 earlier, I'm -- I was program chair of a conference, 03:07:43
10 International Conference on Web and Social Media. 03:07:51
11 It's a big conference and this conference includes 03:07:55
12 researchers from Facebook and Twitter and Google and 03:07:58
13 Microsoft in addition to academics. 03:08:02

14 Q. Does that conference take place every year 03:08:05
15 or is it -- was it a one-off? 03:08:07

16 A. That is an annual conference. 03:08:09

17 MS. MEHTA: Objection, irrelevant. 03:08:10

18 Q. And when did you become the program chair? 03:08:10

19 MS. MEHTA: Irrelevant. 03:08:10

20 A. I was the program chair for two years 03:08:12
21 in -- for the 2013 and 2014 conferences. That 03:08:15
22 allowed me to attend the conference for free and 03:08:22
23 then get a light to go to the conference. 03:08:25

24 So when I was at the conference, where 03:08:30

1 there were researchers from Facebook who I had 03:08:32
2 befriended just as colleagues, I spoke with them 03:08:35
3 about this. In fact, one of them, a lady named Dr. 03:08:40
4 Lada Adamic -- L-A-D-A, A-D-A-M-I-C -- Dr. Adamic 03:08:43
5 was -- we just bumped into each other at the 03:08:53
6 airport. And so immediately, I just turned to her 03:08:57
7 and go like, what happened? And she said, I'm so 03:09:02
8 sorry. And we didn't even identify the topic of the 03:09:05
9 conversation at this point because she knew that I 03:09:11
10 was referring to these specific changes because it 03:09:14
11 was well understood that these changes would inhibit 03:09:17
12 my applications from working. 03:09:20
13 Q. Did she work -- 03:09:23
14 MS. MEHTA: Move to -- hold on -- move to 03:09:23
15 strike, nonresponsive. 03:09:23
16 Q. Did she -- did Dr. Adamic work for 03:09:26
17 Facebook at that time? 03:09:29
18 A. At that time -- 03:09:29
19 MS. MEHTA: Objection -- objection; 03:09:31
20 foundation, relevance. 03:09:31
21 Q. Do you know whether she worked for 03:09:34
22 Facebook at that time? 03:09:35
23 MS. MEHTA: Same objections. 03:09:37
24 A. At that time -- so I had known Lada for 03:09:38

1 some years. At that time, she worked for Facebook. 03:09:42
2 Prior to that, she was a professor at the University 03:09:45
3 of Michigan where she had used my app, NameGenWeb, 03:09:49
4 to teach students social networks, just like how I 03:09:52
5 said teachers around the world used my application 03:09:56
6 to show social networks. She was one of them. 03:09:59

7 Q. Can you put a date, approximate date, on 03:10:02
8 this conference and this meeting at the airport with 03:10:05
9 Dr. Adamic? 03:10:09

10 MS. MEHTA: Same objections. 03:10:09

11 A. It was in May. 03:10:10

12 Q. Of which year? 03:10:11

13 A. Of -- well, 2014. This was May or June. 03:10:13

14 I know it was very hot. It was at University of 03:10:16

15 Michigan. That information is available. But it 03:10:19

16 was -- it wasn't very long after the API changes. 03:10:21

17 It was the conference immediately following that. 03:10:24

18 Q. Okay. And can you remember anything else 03:10:27

19 about your conversation with her at the airport? 03:10:35

20 MS. MEHTA: Objection; relevance. 03:10:37

21 A. Not much really. I do remember us talking 03:10:38

22 about it. One of the things that she said to me 03:10:42

23 that had been said by a number of other academics 03:10:45

24 was that I -- she said, well, you can still access 03:10:48

1 these friendship relations if you come to Menlo and 03:10:51
2 work with us. And I replied to her that I don't -- 03:10:54
3 I don't want to just, you know, go to Facebook and 03:10:58
4 look at data at Facebook. I want to be able to show 03:10:59
5 a user their own data and so -- and then see how 03:11:02
6 that works. And so I don't think it's very fair if 03:11:05
7 I can do that inside Facebook but a regular Facebook 03:11:09
8 user cannot do that. So, I mean, I thanked her for 03:11:11
9 the offer. I thought it was very gracious. But I 03:11:16
10 was -- you know, I wanted to be able to maintain 03:11:18
11 this ability to be done outside of Facebook because 03:11:20
12 I considered this academic research and not research 03:11:24
13 for Facebook. 03:11:30

14 Q. And did you ever speak with her again on 03:11:32
15 the topic of these changes? 03:11:34

16 MS. MEHTA: Irrelevant. 03:11:37

17 A. So Dr. Adamic contacted me, I guess out of 03:11:39
18 the blue, months later. And I was actually, I 03:11:47
19 believe, hosting my relatives in Oxford at the time 03:11:52
20 and I was out somewhere. This email comes in and 03:11:57
21 she says, I'll be reviewing the API changes at -- 03:11:59
22 with Product and, you know, whether there might be 03:12:04
23 special permissions for educational use or 03:12:10
24 something. So I'd like you to tell me what you use 03:12:14

1	MS. MEHTA: Same objections.	03:23:41
2	A. That is correct.	03:23:47
3	Q. And then at the bottom of page 12, you	03:23:47
4	refer to the Open Graph API 2.0. Do you see that?	03:23:51
5	A. I do see that.	03:23:54
6	Q. And you say, "This change would prove to	03:23:56
7	be most consequential while not necessarily being	03:23:58
8	the most privacy sensitive."	03:24:02
9	A. Yes.	03:24:05
10	Q. What did you mean by that?	03:24:05
11	MS. MEHTA: Objection; purports to call	03:24:07
12	for expert testimony from a lay witness, vague,	03:24:07
13	foundation, and irrelevant.	03:24:10
14	A. So one of the reasons that were given, in	03:24:14
15	my understanding, for the removal of the friendship	03:24:21
16	permissions was that this -- that the friendship	03:24:26
17	permissions were too generous. Too many people had	03:24:28
18	access to the Facebook graph because it was part of	03:24:32
19	the basic permissions. That means any application	03:24:35
20	developer could have this. So that is probably too	03:24:38
21	generous. That's likely too generous. And so I	03:24:43
22	agree with Facebook in making it its own special	03:24:47
23	permission that you have to request and not just	03:24:50
24	giving it away for free.	03:24:53

1	However, instead of making it its own	03:24:56
2	permission and just -- instead of making its own	03:24:58
3	permission and still having the same data available,	03:25:05
4	they made it its own permission and really	03:25:09
5	drastically restricted the scope of what data was	03:25:13
6	available. So they would say that that's for	03:25:16
7	privacy reasons. But as is evident, other	03:25:18
8	applications still appear to be able to access this	03:25:23
9	data, even though it's not supposed to be available.	03:25:28

10	Q. What applications are you referring to?	03:25:31
----	--	----------

11 A. I know for a --

03:25:34

12	MS. MEHTA: Hold on. Objection;	03:25:34
13	irrelevant, purports to call for expert opinion from	03:25:35
14	a lay witness, foundation, speculation.	03:25:37

15	THE WITNESS: I knew that was coming for	03:25:42
16	that one.	03:25:44

17	A. So I was single for awhile and I had used	03:25:51
18	Tinder, which is an online dating application. It	03:25:55
19	shows you people that are also on Tinder in your	03:26:00
20	local area. Now, Tinder used Facebook as a login.	03:26:05
21	And so you could download your photos from Facebook	03:26:08
22	to Tinder and so that they would be available on	03:26:11
23	Tinder. And after the API change, it also showed	03:26:14
24	you -- you know, so these people that you would see	03:26:18

1 and then say this could be a prospective date. And 03:26:21
2 then you could do things like swipe left to say no, 03:26:25
3 I'm not interested or swipe right to say yes, I am 03:26:28
4 interested. 03:26:30

5 In order to make these people feel less 03:26:32
6 like strangers, there's lots of other information 03:26:36
7 there, and this information primarily comes from 03:26:38
8 Facebook. This includes whether Tinder -- this 03:26:41
9 Tinder user, who is a stranger, has friends in 03:26:46
10 common with you. So even though they have inhibited 03:26:50
11 me from showing a user their own friends, Facebook 03:26:56
12 still allow Tinder to show a complete stranger the 03:27:00
13 friends that we have in common. 03:27:06

14 MS. MEHTA: Move to strike, nonresponsive. 03:27:08

15 A. That is what I meant by saying it would be 03:27:10
16 very consequential while not necessarily being the 03:27:13
17 most privacy sensitive. 03:27:17

18 Q. Okay, thank you. Did you or have you read 03:27:20
19 any articles in the public press about Facebook 03:27:26
20 entering into some sort of a private agreement with 03:27:31
21 Tinder to make this available? 03:27:35

22 MS. MEHTA: Objection; irrelevant, 03:27:38
23 foundation, speculation. 03:27:38

24 A. I was curious as to how they had access 03:27:42

1 to -- how Facebook had -- how Tinder, sorry -- had 03:27:45
2 access to the Facebook social graph. And I was 03:27:48
3 forwarded a story that actually featured College 03:27:53
4 Connect in it. It featured my colleague, Nicole 03:27:57
5 Ellison, not myself. I was never interviewed for 03:28:00
6 that specific article. In that article, it is 03:28:05
7 quoted as saying that Tinder have had some sort of 03:28:08
8 access to Facebook. That's the only time I can 03:28:14
9 recall seeing that in print. I was surprised to see 03:28:17
10 it in print, in fact. 03:28:22

11 MR. GODKIN: Let me ask the reporter to 03:28:24
12 mark as the next exhibit this document. So this 03:28:25
13 would be ... 03:28:27

14 THE COURT REPORTER: Eight. 03:28:27

15 MR. GODKIN: Eight. 03:28:27

16 (Exhibit 8 was marked for identification 03:28:42
17 and was attached to the transcript.) 03:28:45

18 BY MR. GODKIN 03:28:45

19 Q. I've placed in front of you what we've 03:28:45
20 marked as Hogan Exhibit 8, Dr. Hogan. 03:28:45

21 A. Yes. 03:28:48

22 Q. Can you identify Exhibit 8? 03:28:49

23 A. This is the Wall Street Journal article by 03:28:51
24 Deepa Seetharaman and Elizabeth Dwoskin that I had 03:28:54

1 mentioned previously which was a document that -- 03:29:00
2 was a newspaper story describing the changes that 03:29:03
3 took place with Graph API 2.0. 03:29:09

4 Q. And this is the article that you just 03:29:13
5 testified about a few moments ago? 03:29:16

6 A. Yes, this is the article I testified a few 03:29:18
7 minutes ago that mentioned, you know, API changes 03:29:21
8 and who can still access this data. 03:29:25

9 Q. And if you turn to the third page, there's 03:29:29
10 an article in the middle -- in the middle of the 03:29:33
11 page referencing the popular dating app Tinder. Is 03:29:35
12 that what you were referring to -- 03:29:40

13 MS. MEHTA: Oh -- sorry, go ahead. 03:29:41

14 Q. -- that gave you the information that you 03:29:41
15 testified about Tinder and Facebook? 03:29:44

16 MS. MEHTA: Objection; foundation, 03:29:47
17 speculation, irrelevant. 03:29:48

18 A. Yes, this is the article in question and 03:29:51
19 that is the paragraph in question. 03:29:54

20 Q. And the next paragraph, which begins 03:29:56
21 "Facebook changes doomed College Connect, an app 03:29:59
22 aimed at helping prospective first-generation 03:30:02
23 college students find friends who attend schools or 03:30:07
24 hold jobs they are considering," correct? 03:30:11

1	A.	That is correct.	03:30:14
2	Q.	And that's your app, College Connect?	03:30:14
3	A.	That is my app.	03:30:18
4	Q.	And the next sentence references Nicole	03:30:19
5		Ellison, a University of Michigan professor, and	03:30:22
6		she's your colleague that worked with you on the	03:30:25
7		College Connect app?	03:30:28
8	A.	That is the very same Nicole Ellison.	03:30:28
9	Q.	Okay. Were you interviewed by the Wall	03:30:35
10		Street Journal for this article?	03:30:39
11	A.	I was not --	03:30:40
12		MS. MEHTA: Asked and answered.	03:30:40
13	A.	I was not interviewed by the Wall Street	03:30:42
14		Journal for this article.	03:30:42
15	Q.	Did Facebook offer College Connect the	03:30:46
16		same access to data as it apparently is giving	03:30:50
17		Tinder?	03:30:54
18		MS. MEHTA: Objection; assuming facts not	03:30:54
19		in evidence, foundation, speculation, irrelevant.	03:30:56
20	A.	To the best of my knowledge, we have not	03:31:01
21		been approached by Facebook to be given the same	03:31:04
22		level of access to data that Tinder has. The	03:31:08
23		closest to that would have been the previously	03:31:13
24		mentioned conversation with Dr. Adamic about an	03:31:16

1 educational API.

03:31:19

2 Q. Did the introduction of the changes
3 reflected in Graph API Version 2.0 have an effect on
4 your research?

03:31:21

03:31:24

03:31:30

5 MS. MEHTA: Objection; irrelevant.

03:31:32

6 A. That -- the changes made the applications
7 that I was developing or had developed cease to
8 function. So I had to change some of my research
9 agenda as a consequence. Up to that point, I
10 thought that I would be continuing on a variety of
11 work on the Facebook API moving forward. In fact,
12 as I said, we changed College Connect. We changed
13 it to be a laboratory study. In that laboratory
14 study, we showed that actually showing the Facebook
15 social graph made a real difference to who people
16 were able to nominate as their -- as good people for
17 advice.

03:31:36

03:31:42

03:31:47

03:31:52

03:31:55

03:31:59

03:32:04

03:32:07

03:32:10

03:32:13

03:32:16

03:32:22

18 So I wanted to continue on this. I have,
19 for example, a colleague at the University of
20 Swansea, Dr. Daniel Archambault, and we had put
21 together a grant to see what are the kinds of
22 visualization layouts that work best for showing
23 someone their social network. That research cannot
24 continue because we cannot see Facebook social

03:32:22

03:32:27

03:32:30

03:32:37

03:32:40

03:32:45

03:32:51

1 Q. And can I also take it that you can't 04:24:25
2 comment on the extent to which at all they did an 04:24:28
3 analysis of the Terms of Service either prior to 04:24:31
4 becoming developers or after becoming a developer? 04:24:34

5 A. Yeah, no, I don't -- no, I don't know of 04:24:39
6 any analysis they did. 04:24:41

7 Q. Okay. Let's look at Exhibit Number 8. 04:24:53
8 This is the Wall Street Journal article that came up 04:24:57
9 in your discussions with counsel for Six4Three and 04:25:10
10 that you testified about earlier today; is that 04:25:12
11 right? 04:25:14

12 A. Yes, ma'am. 04:25:14

13 Q. Okay. And during your testimony, you 04:25:15
14 referenced your belief that Tinder had some sort of 04:25:16
15 agreement with Facebook after the API change. Do 04:25:22
16 you recall that? 04:25:25

17 A. I do recall that. 04:25:26

18 Q. And you testified that your basis for that 04:25:27
19 is this Wall Street Journal article; is that 04:25:28
20 correct? 04:25:31

21 A. Not entirely. It's also my experience on 04:25:33
22 Tinder and my previous understanding of how the API 04:25:38
23 works and what APIs were available or not available 04:25:42
24 that led me to ponder why it was or how it was that 04:25:44

1 Tinder had access to data. This had confirmed for 04:25:49
2 me that the reason or the nature of that access was 04:25:53
3 because of a deal. 04:25:57

4 Q. Okay. So let's take a step back and break 04:25:58
5 that down. When you talk about your experience on 04:26:01
6 Tinder, you're discussing your experience as a user; 04:26:03
7 is that right? 04:26:06

8 A. That is correct. 04:26:07

9 Q. Okay. You don't have any knowledge as to 04:26:07
10 how the Tinder app works, correct? 04:26:09

11 MR. GODKIN: Objection. 04:26:13

12 A. As an expert in the design of social media 04:26:13
13 systems and someone who also publishes on online 04:26:19
14 dating, I have understanding of how apps work. I 04:26:25
15 don't have any factual details about decisions that 04:26:29
16 Tinder have made or have not made. 04:26:34

17 Q. Right. You've never seen the Tinder 04:26:35
18 source code, right? 04:26:38

19 A. No, ma'am. 04:26:39

20 Q. Is that correct? 04:26:40

21 A. That is correct. I have not seen the 04:26:41
22 Tinder source code. 04:26:41

23 Q. You've never talked to anyone at Tinder 04:26:42
24 about whether they have a deal or don't have a deal 04:26:45

1 with Facebook, correct?

04:26:47

2 A. I have not talked to anyone at Tinder
3 about that.

04:26:49

04:26:51

4 Q. You don't have any personal knowledge of
5 any relationship or deal or agreement between Tinder
6 and Facebook, correct?

04:26:51

04:26:54

04:26:57

7 A. My information about Tinder comes -- of a
8 deal between them comes solely from this paragraph.

04:26:59

04:27:02

9 Q. Okay. So all of the information that you
10 have about what you believe to be a deal between
11 Tinder and Facebook comes from the one paragraph of
12 the Wall Street Journal article. You don't have any
13 personal knowledge, correct?

04:27:06

04:27:08

04:27:11

04:27:15

04:27:17

14 A. It's not fair to say that entirely
15 because, again, the mere fact that they can expose
16 friends suggests that they had access to this data.
17 I know that because I have been on the app and have
18 observed that.

04:27:19

04:27:20

04:27:25

04:27:30

04:27:33

19 Q. When was the last time you were on the
20 app?

04:27:35

04:27:37

21 A. Oh, about a year ago.

04:27:37

22 Q. Okay. So my question is -- so in 2016
23 sometime?

04:27:39

04:27:41

24 A. Yes, ma'am.

04:27:41

1 Q. Okay. So my question is not what you 04:27:42
2 observed as a user of Tinder. I understand that you 04:27:45
3 are a user of Tinder -- 04:27:47

4 A. Yeah, I was. 04:27:49

5 Q. -- that's -- or were a user of Tinder. 04:27:49
6 Set that aside for a moment. My question is: Other 04:27:51
7 than what you can see as a user for Tinder and the 04:27:55
8 Wall Street Journal application, you don't have any 04:27:58
9 personal knowledge of anything -- any agreement 04:28:01
10 between Tinder and Facebook; correct? 04:28:04

11 MR. GODKIN: Objection. 04:28:07

12 A. No, I don't have any knowledge of an 04:28:07
13 agreement. All I have is the understanding that 04:28:10
14 there must be some sort of agreement. Otherwise, 04:28:14
15 Tinder would not have that data. 04:28:17

16 Q. You're assuming that they must have an 04:28:21
17 agreement. Otherwise, you wouldn't see what you're 04:28:23
18 seeing on the app. 04:28:25

19 A. I believe that that's a fair assumption. 04:28:26
20 There is no evidence to suggest that Tinder have 04:28:30
21 hacked Facebook because Tinder have used Facebook 04:28:34
22 and have been featured, you know, in Facebook 04:28:39
23 conferences and Facebook materials and vice versa. 04:28:43
24 So insofar as I have been able to observe that 04:28:47

1 Tinder and Facebook seem to get along and that 04:28:52
2 Tinder uses data from Facebook, that there must be 04:28:55
3 some sort of agreement. I am not privy to the 04:29:00
4 nature of that agreement. 04:29:04

5 Q. Okay. Let's focus in on the question, 04:29:05
6 okay? Yes or no; do you have any personal knowledge 04:29:07
7 of any agreement between Tinder and Facebook? 04:29:10

8 A. No. 04:29:14

9 Q. Yes or no; do you have any personal 04:29:18
10 knowledge as to what specific permissions Tinder has 04:29:20
11 or doesn't have from Facebook? 04:29:26

12 A. No. 04:29:29

13 Q. There was a question from Mr. Godkin as to 04:29:36
14 whether or not your app has some sort of agreement 04:29:39
15 with Facebook. Do you recall that? 04:29:44

16 A. Yes, I recall that. 04:29:46

17 Q. And you testified that you have not been 04:29:48
18 approached by Facebook with respect to a special 04:29:49
19 agreement of any kind; is that right? 04:29:54

20 A. Well, I mean, previously -- you know, I 04:29:56
21 mean, Exhibit 6 would suggest that I have been 04:29:59
22 approached about a potential special agreement 04:30:02
23 referred to as the -- some sort of academic API 04:30:06
24 program. But beyond that, I have not been 04:30:10

1 A. Well, I wouldn't say Yale. I mean, if
2 they're a lawyer.

3 Q. Fair, but if somebody went to Yale or
4 another law school, they're going to be in a better
5 position than somebody without legal training,
6 right?

7 MR. GODKIN: Objection.

8 A. Well, if someone is a lawyer, that gives
9 them a certain privileged understanding of this
10 document.

11 Q. Okay. Setting that aside, when you as a
12 developer seek to understand the Facebook terms, you
13 wouldn't elevate paragraph nine or look at paragraph
14 nine in isolation. You'd have to look at all of the
15 terms to get an understanding of what the
16 relationship between the developer and Facebook is,
17 correct?

18 MR. GODKIN: Objection.

19 A. I can say that one cannot look at that
20 paragraph, paragraph nine, in isolation.

21 Q. Okay. Let's look at page -- sorry,
22 Exhibit Number 5.

23 Oh, actually, you know what? Sorry, one
24 more before we get to that. When you signed up as a

1 developer to Facebook, did you believe that you were 05:12:24
2 going to have full access to all of Facebook's user 05:12:27
3 data forever? 05:12:32

4 A. No, I didn't even believe I'd have access 05:12:34
5 to most of Facebook's user data. At first, I didn't 05:12:35
6 know what data I would have access to and that 05:12:41
7 through -- and this is actually relevant to this -- 05:12:44
8 through prototyping and toying around with apps and 05:12:47
9 learning about hidden things like rate limiting, I 05:12:52
10 became more clear about what data was available. 05:12:54
11 But I -- no, I mean, Facebook's data use policies 05:12:57
12 change all the time. Their API's change all the 05:13:01
13 time. So it would totally be fair for me to assume 05:13:03
14 that I did not assume -- it would be totally fair 05:13:06
15 for me to say I did not assume that I would have 05:13:07
16 access to all user data for all time. 05:13:13

17 Q. Okay. And when you first signed up to be 05:13:16
18 a developer for Facebook, did you believe that you 05:13:19
19 would have -- strike that. 05:13:21

20 When you first signed up to be a developer 05:13:22
21 for Facebook, did you believe that whatever set of 05:13:25
22 access or permissions you had at that time, you were 05:13:28
23 going to have forever? Or did you understand that 05:13:30
24 the API was going to change and that the platform 05:13:37

1 would change and that Facebook is going to evolve as 05:13:40
2 a company -- 05:13:42

3 MR. GODKIN: Objection. 05:13:43

4 Q. -- and that your ability to access data 05:13:44
5 might evolve as Facebook does? 05:13:45

6 MR. GODKIN: Objection. 05:13:46

7 A. Well, I don't really like the word 05:13:47
8 "evolve" here. Devolve may be a more accurate word. 05:13:48
9 But I do understand that that would change. 05:13:52
10 Facebook themselves change what's available in the 05:13:53
11 API. 05:13:56

12 However, it's important to distinguish 05:13:57
13 that I think there's some kind of data that's maybe 05:13:58
14 incidental. Facebook, for example, made phone 05:14:03
15 numbers available for one point and then at one 05:14:07
16 point, they didn't. That's different from core 05:14:08
17 functionality. Facebook is a social network site. 05:14:11
18 The movie based on Facebook is called the Social 05:14:15
19 Network. It calls itself a social network. So I 05:14:16
20 had pretty strong understandings that social network 05:14:21
21 data would be consistently available for a long 05:14:26
22 period of time, and I certainly acted under the 05:14:30
23 expectations that such core functionality -- so core 05:14:34
24 that it's in the basic permissions -- would still be 05:14:36

1 available for a long time.

05:14:40

2 Q. Okay. So are you -- so your testimony
3 is -- what you're telling the jury is that when you
4 signed up as a developer for Facebook, you believed
5 that you would have access to the same set of
6 permissions and data in perpetuity.

05:14:42

05:14:43

05:14:47

05:14:49

05:14:52

7 MR. GODKIN: Objection.

05:14:55

8 Q. Yes or no.

05:14:56

9 A. No, I don't think that -- no, I don't
10 think that that's a fair statement.

05:14:56

05:14:57

11 Q. Okay. So --

05:15:00

12 A. No, I don't think that in perpetuity is a
13 fair characterization.

05:15:02

05:15:05

14 Q. Okay.

05:15:06

15 A. I think a fair characterization is that I
16 would have access to core data for certainly a
17 longer time horizon than I was given.

05:15:07

05:15:09

05:15:14

18 Q. Okay. Let me ask the question this way.

05:15:17

19 Yes or no; when you signed up as a developer, did

05:15:18

20 you believe that you were going to have access to

05:15:21

21 the same set of data and permissions in perpetuity?

05:15:23

22 Yes or no.

05:15:25

23 A. No.

05:15:27

24 Q. When you signed as a developer, did you

05:15:31

1 BY MS. MILLER:

2 Q. Well, let me ask you this way: Did you
3 learn anything new from reading the complaint that you
4 did not know before?

5 A. I mean, substantively, with respect to
6 this case, I learned about this case.

7 With respect to the facts and whether they were
8 expressed accurately in that document or not, there
9 was -- I learned that there was some expression of
10 concern about when the decision was made internally to
11 change the API in some way and that -- that there was
12 some sort of discrepancy.

13 I used, since then, a link that was in that
14 document suggesting that a large number of the top
15 iPhone apps in, I guess, 2011 or 2012 -- I can't
16 recall, but it would be the single URL in there. It
17 was an infographic suggesting that they had used the
18 Facebook API. I went and looked for that infographic
19 to see if I could find the statistics myself, and
20 I could not find the original sources for them.

21 But other than that, I mean, most of what was
22 in there was public knowledge; a lot of discussions of
23 claims that were advanced by Mark Zuckerberg. Some of
24 this I had been aware of beforehand, and most of it,
25 I would say, I was aware of beforehand.