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13 *Attorneys for Plaintiffs and the Proposed Class*

14 UNITED STATES DISTRICT COURT  
15 NORTHERN DISTRICT OF CALIFORNIA  
16 OAKLAND DIVISION  
17

18 MATTHEW CAMPBELL and MICHAEL  
19 HURLEY, on behalf of themselves and all  
others similarly situated,

20 Plaintiff,

21 v.

22 FACEBOOK, INC.,

23 Defendant.  
24

Case No. C 13-05996 PJH (MEJ)

**DECLARATION OF DAVID SLADE IN  
SUPPORT OF PLAINTIFFS' MOTION  
FOR CLASS CERTIFICATION**

Date: March 16, 2016  
Time: 9:00 a.m.  
Judge: Hon. Phyllis J. Hamilton  
Place: Courtroom 3, 3rd Floor

1 I, David Slade, declare:

2 1. I am an attorney in the law firm Carney, Bates and Pulliam, PLLC, a member of  
3 the State Bar of Arkansas, and am admitted *pro hac vice* to practice before this Court. I am one  
4 of the counsel for Plaintiffs in this action. I make this declaration based on my own personal  
5 knowledge. If called upon to testify, I could and would testify competently to the truth of the  
6 matters stated herein.

7 2. I submit this Declaration in support of Plaintiffs' Motion for Class Certification.

8 3. A true and correct copy of the Rebuttal Report of Jennifer Golbeck in Support of  
9 Plaintiffs' Motion for Class Certification is attached hereto as **Exhibit 1.**

10 4. A true and correct copy of excerpts from the May 19, 2015 deposition of Matthew  
11 Campbell is attached as **Exhibit 2.**

12 5. A true and correct copy of excerpts from the July 9, 2015 deposition of Michael  
13 Hurley is attached hereto as **Exhibit 3.**

14 6. A true and correct copy of an article entitled, *Matt Campbell of the Blue Hog*  
15 *Report Keeps on Digging*, by Jan Cottingham of Arkansas Business News (Jun. 8, 2015) is  
16 attached hereto as **Exhibit 4.**

17 7. A true and correct copy of an article entitled, *Matt Campbell's Greatest Hits: A*  
18 *Timeline of the Blue Hog Report*, by Jan Cottingham of Arkansas Business News (Jun. 8, 2015) is  
19 attached hereto as **Exhibit 5.**

20 8. A true and correct copy of excerpts from the October 1, 2015 deposition of David  
21 Shadpour is attached **Exhibit 6.**

22 9. A copy of the document bearing Bates stamp FB000005575, which was produced  
23 by Facebook in this action, is attached hereto as **Exhibit 7.** The copy of this document attached  
24 as Exhibit 7 bears highlighting from Plaintiffs' counsel to illustrate certain facts for the Court.

25 10. A true and correct copy of excerpts from the February 4, 2016 deposition of Alex  
26 Himel is attached hereto as **Exhibit 8.**

27 11. A true and correct copy of the Updated Report of Fernando Torres in Support of  
28 Plaintiffs' Motion for Class Certification is attached hereto as **Exhibit 9.**

1           12.     A true and correct copy of excerpts from the December 18, 2015 deposition of  
2 Fernando Torres is attached hereto as **Exhibit 10.**

3           13.     A true and correct copy of excerpts from the January 26, 2016 deposition of Dr.  
4 Catherine Tucker is attached hereto as **Exhibit 11.**

5           14.     A true and correct copy of excerpts from the February 2, 2016 deposition of Dr.  
6 Benjamin Goldberg is attached hereto as **Exhibit 12.**

7           15.     A true and correct copy of Google News Search for the term “Volkswagen  
8 ‘software device,’” which returned about 37,400 results, is attached hereto as **Exhibit 13.**

9           16.     A true and correct copy of the document bearing Bates stamp FB000005577,  
10 which was produced by Facebook in this action, is attached hereto as **Exhibit 14.**

11          17.     A true and correct copy of the document bearing Bates stamp FB000005800,  
12 which was produced by Facebook in this action, is attached hereto as **Exhibit 15.**

13          18.     A true and correct copy of the document bearing Bates stamp FB000005882,  
14 which was produced by Facebook in this action, is attached hereto as **Exhibit 16.**

15          19.     A true and correct copy of the document bearing Bates stamp FB000006007,  
16 which was produced by Facebook in this action, is attached hereto as **Exhibit 17.**

17          20.     A true and correct copy of the document bearing Bates stamp FB000006088,  
18 which was produced by Facebook in this action, is attached hereto as **Exhibit 18.**

19          21.     A true and correct copy of the document bearing Bates stamp FB000012006,  
20 which was produced by Facebook in this action, is attached hereto as **Exhibit 19.**

21          22.     A true and correct copy of the document bearing Bates stamp FB000012557,  
22 which was produced by Facebook in this action, is attached hereto as **Exhibit 20.**

23                 I declare under penalty of perjury that the foregoing is true and correct and that this  
24 Declaration was signed in Little Rock Arkansas, on February 19, 2016.

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CARNEY BATES AND PULLIAM, PLLC

By:                     /s/David Slade            
                  David Slade

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**ATTESTATION**

I, Michael W. Sobol, am the ECF user whose identification and password are being used to file this document. I hereby attest that David Slade has concurred in this filing.

DATED: February 19, 2016

/s/ Michael W. Sobol  
Michael W. Sobol

# **EXHIBIT 1**

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17 MATTHEW CAMPBELL and MICHAEL  
HURLEY, on behalf of themselves and all  
18 others similarly situated,

19 Plaintiffs,

20 v.

21 FACEBOOK, INC.,

22 Defendant.  
23

Case No. C 13-05996 PJH (MEJ)

**REBUTTAL REPORT OF DR. JENNIFER  
GOLBECK IN SUPPORT OF  
PLAINTIFFS' MOTION FOR CLASS  
CERTIFICATION**

**HEARING**

Date: March 16, 2016

Time: 9:00 a.m.

Place: Courtroom 3, 3rd Floor  
The Honorable Phyllis J. Hamilton

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1 **I. SCOPE OF ENGAGEMENT**

2 1. I have been asked by the Plaintiffs through their counsel to respond to the  
3 conclusions expressed in the Expert Report of Dr. Benjamin Goldberg submitted with Defendant  
4 Facebook Inc.'s Opposition to Plaintiffs' Motion for Class Certification ("Goldberg Report"),  
5 statements made by Facebook Engineering Manager Alex Himel in his declaration submitted in  
6 support of Facebook's Opposition, and characterizations of my testimony made by Facebook in  
7 its Opposition to Plaintiffs' Motion for Class Certification.

8 **II. METHODOLOGY**

9 2. My rebuttal opinions, as well as the evidence I rely upon to support them, are set  
10 forth in detail in this rebuttal report. The contents of the various exhibits that I identify by name  
11 are meant to be incorporated, in their entirety, by such reference.

12 3. As with my opening report submitted in connection with Plaintiffs' Motion for  
13 Class Certification ("Golbeck Opening Report"), in preparing this report, I have employed  
14 methods and analyses of a type reasonably relied upon by experts in my field in forming opinions  
15 or inferences on the subject. The opinions expressed are based upon a reasonable degree of  
16 computer science certainty.

17 4. Between now and such time that I may be asked to testify before the Court, I  
18 expect to continue my review, evaluation, and analysis of information generated during  
19 discovery, as well as of relevant evidence presented before and/or at trial. I also expect to review  
20 any further reports submitted by Facebook's experts. I reserve the right to amend or supplement  
21 this rebuttal report, as necessary and as acceptable to the Court. I also reserve the right to develop  
22 materials and exhibits as appropriate for use in helping to demonstrate and explain my opinions in  
23 the event that I am asked to testify at trial.

24 5. In forming my opinions, I have reviewed source code which I understand was  
25 provided by Facebook's counsel and which was represented as containing the relevant source  
26 code between some time in 2009 and December 2012.

27 6. Additionally I have reviewed internal Facebook documents produced in this  
28 litigation, the Goldberg Report, the transcript of the deposition of Dr. Goldberg, the declarations



1 of various Facebook employees submitted in support of Facebook’s Opposition to Plaintiffs’  
2 Motion for Class Certification, the deposition transcripts of those employees, as well as certain  
3 public materials. The list of documents I have considered in forming my opinions in this rebuttal  
4 report is attached to this report as Appendix A.

5 **III. ASCERTAINABILITY**

6 **A. Class Members are Ascertainable from Facebook’s Records**

7 7. Facebook has a database called [REDACTED]  
8 [REDACTED]. I understand that Facebook produced the [REDACTED]  
9 [REDACTED] Exhibit A to  
10 Facebook’s Second Supplemental Responses and Objections to Plaintiffs’ Narrowed Second Set  
11 of Interrogatories [REDACTED] [REDACTED] [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED].

16 8. The contents of the page include [REDACTED], including:

- 17 [REDACTED]
- 18 [REDACTED]
- 19 [REDACTED]
- 20 [REDACTED]

21 [REDACTED]  
22 9. The [REDACTED] can be used to access information about Class members. The

23 [REDACTED]  
24 [REDACTED] could be written that would identify the senders and  
25 recipients of Private Messages sent during the Class Period with URL attachments [REDACTED]  
26 [REDACTED] by doing the following:

27  
28 <sup>1</sup> Facebook Appendix (“App.”) at 1534-1555.

<sup>2</sup> Ex. 7 to the Declaration of David Slade (“Slade Decl.”)

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[REDACTED]

[REDACTED]

[REDACTED]

10. Specifically, the query would involve identifying the following information related to the Class Definition:

a. Private Messages within the Class Period based upon [REDACTED] [REDACTED] (highlighted in yellow in Slade Decl. Ex. 7);

b. Within that time period, Private Messages that [REDACTED] [REDACTED] [REDACTED] (highlighted in red in Slade Decl. Ex. 7);

c. Sender of each Class-qualifying message based upon [REDACTED] [REDACTED] (highlighted in blue in Slade Decl. Ex. 7); and

d. Recipient(s) of each Class-qualifying message based upon [REDACTED] [REDACTED] (highlighted in green in Slade Decl. Ex. 7).

11. Focusing on the above-described fields also addresses an issue raised by Facebook in its brief: the fact that [REDACTED]

[REDACTED].<sup>3</sup> In discovery, I understand that Facebook was able to produce the [REDACTED]

[REDACTED], marked as FB000005577, FB000005800, FB000005882, FB000006007, FB000006088, FB000012006,

<sup>3</sup> Opp. at 12:11.

1 and FB000012557.<sup>4</sup> Reviewing each of these [REDACTED]  
2 [REDACTED]

3 [REDACTED]:

4 a. FB000005577<sup>5</sup> shows that [REDACTED]  
5 [REDACTED]  
6 [REDACTED] in the course of the transmission of this Private  
7 Message, and the above-describe query I articulate would exclude such a message, accordingly.

8 b. FB000005800<sup>6</sup> presents a similar case in that, [REDACTED]  
9 [REDACTED]  
10 [REDACTED] this  
11 message would be between Facebook users who were outside of the proposed Class.

12 c. FB000005882,<sup>7</sup> like FB000005577, shows that [REDACTED]  
13 [REDACTED]  
14 [REDACTED].

15 d. FB000006007,<sup>8</sup> like FB000005577, shows that [REDACTED]  
16 [REDACTED]  
17 [REDACTED].

18 e. FB000006088,<sup>9</sup> like FB000005577, shows that [REDACTED]  
19 [REDACTED]  
20 [REDACTED].

21 f. FB000012006,<sup>10</sup> like FB000005577, shows that [REDACTED]  
22 [REDACTED]  
23 [REDACTED].

24 \_\_\_\_\_  
25 <sup>4</sup> This understanding is based upon the table represented in Exhibit A To Defendant Facebook,  
26 Inc.'s Second Supplemental Responses And Objections To Plaintiffs' Narrowed Second Set Of  
27 Interrogatories (App. 1534-1555).

28 <sup>5</sup> Slade Decl. Ex. 14.

<sup>6</sup> Slade Decl. Ex. 15.

<sup>7</sup> Slade Decl. Ex. 16.

<sup>8</sup> Slade Decl. Ex. 17.

<sup>9</sup> Slade Decl. Ex. 18.

<sup>10</sup> Slade Decl. Ex. 19.

1 g. FB000012557<sup>11</sup> displays a [REDACTED]  
2 [REDACTED]  
3 [REDACTED], as this message would be between Facebook users who  
4 were outside of the proposed Class.

5 12. The above query identifies the relevant fields within [REDACTED]  
6 [REDACTED]. As I describe in paragraphs 98-105 of my Opening Report, [REDACTED]  
7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED], Class members can be readily identified.  
10 The above query addresses what I understand to be the relevant inquiry for identifying Class  
11 members: that is, whether or not [REDACTED] a Private Message sent with a  
12 URL attachment. [REDACTED]  
13 [REDACTED] will separate Class members from non-Class members .

14 13. If the names of [REDACTED]  
15 [REDACTED] have subsequently changed, this query could be modified  
16 accordingly to address any changes [REDACTED].

17 14. It appears that Dr. Goldberg’s and Facebook’s criticism of my methods described  
18 in my opening report and my deposition are based on an assumption that [REDACTED]  
19 [REDACTED]  
20 [REDACTED]. Although I did not [REDACTED]  
21 [REDACTED] to make these identifications, even offering an example query  
22 (though it may need some tweaking after I have the opportunity to test it in practice).

23 15. As I state in my Opening Report, the queries I offered were not intended to  
24 retrieve a final list of Class members. As a preface to the sample code, I stated, “[a] database  
25 query could be used [REDACTED]  
26 [REDACTED] (§ 103). I never suggested that everyone [REDACTED]  
27 [REDACTED] was equivalent to the complete list of the Class members.

28 \_\_\_\_\_  
<sup>11</sup> Slade Decl. Ex. 20.

1           16.     Dr. Goldberg and Mr. Himel both argue my example code will be both under- and  
2 over- inclusive of Class members, without acknowledging that the parameters necessary to  
3 identify the Class are readily available.

4           17.     At ¶¶ 66-77 of his report Dr. Goldberg argues that the method that I propose would  
5 [REDACTED] (*id.* ¶  
6 67). However, the examples that he provides are cases which either 1) take the user out of Class  
7 definition or, 2) are due to system failures, the frequency of which is likely very low. I respond to  
8 each of these cases below:

9           a.     ¶ 68: “*This query will be under-inclusive in that it will not reflect recipients*  
10 *of messages* [REDACTED]  
11 [REDACTED].

12           b.     ¶ 69: “*This query will be under-inclusive in that it will not identify* [REDACTED]  
13 [REDACTED] I have not seen any  
14 evidence or documentation supporting Dr. Goldberg’s underlying assumption that if [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED].

18           c.     ¶ 70: “*This query will be under-inclusive in that it will not identify senders*  
19 *and recipients whose accounts were deleted.*” I have not seen any evidence or documentation  
20 supporting Dr. Goldberg’s underlying assumption that [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED].

24           d.     ¶ 71: “*This query will be under-inclusive in that it will not identify* [REDACTED]  
25 [REDACTED]  
26 [REDACTED]  
27 [REDACTED]  
28 [REDACTED].

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[REDACTED]

[REDACTED].

e. ¶ 72: *“This query will be under-inclusive in that it will not identify* [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

f. ¶ 73: *“This query will be under-inclusive in that it will not identify* [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

g. ¶ 74: *“This query will be over-inclusive in that it will include senders whose messages did not contain URLs in their text.”* This appears to be referencing a scenario where [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

h. ¶ 75: *“This query will be over-inclusive in that it will include* [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

i. ¶ 76: *“This query will be over-inclusive in that it will include senders and recipients outside the United States.”* Facebook knows if users are within the United States and could check this for senders and recipients whose messages were intercepted. Facebook states on

1 its website that this data is collected for advertising purposes.<sup>12</sup> [REDACTED]

2 [REDACTED]  
3 [REDACTED]  
4 [REDACTED]  
5 [REDACTED]  
6 [REDACTED].  
7 j. ¶ 77: “This query will be over-inclusive in that it will include senders of  
8 messages outside the Class Period.” As explained above, [REDACTED]

9 [REDACTED].  
10 18. At ¶¶ 78-86 of his report, Dr. Goldberg argues that my proposed methods are  
11 “overbroad in that [they] will identify senders that were not subject to the challenged ‘uses.’”  
12 However, the Facebook code is written such that [REDACTED]

13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED].  
17 19. At ¶ 78 of his report, Dr. Goldberg states: “Dr. Golbeck’s query is overbroad in  
18 that it will identify senders that were not subject to the challenged ‘uses.’ In her deposition, Dr.  
19 Golbeck conceded each of these flaws in her proposed query and said that identifying those that  
20 were subject to the challenged ‘uses’ would be ‘case-specific.’” This is a misstatement of my  
21 deposition testimony. I was asked specifically if [REDACTED]  
22 [REDACTED] not if it was possible to  
23 identify senders subject to uses.<sup>14</sup>

24  
25  
26 <sup>12</sup> See <https://www.facebook.com/business/help/133609753380850> (“**How does Facebook know**  
27 **when people are in the locations I’m targeting?** Facebook uses information from multiple  
sources such as current city from profile, IP address, data from mobile devices if location services  
are enabled, and aggregated information about the location of friends.”).

28 <sup>13</sup> FB000027191.

<sup>14</sup> App. 1337 (Golbeck Depo. 344:7-19).

1 20. At ¶ 79 of his report, Dr. Goldberg states: “This query cannot identify senders

2 [REDACTED]  
3 [REDACTED]  
4 [REDACTED].

5 21. Similarly, the “uses” Dr. Goldberg identifies at ¶¶ 80-86<sup>15</sup> of his report are all  
6 instances where [REDACTED]

7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]  
10 [REDACTED].

11 **IV. FACEBOOK’S INTERCEPTION OF PRIVATE MESSAGE CONTENT**

12 **A. [REDACTED] Are not Necessary for Message Delivery**

13 1. [REDACTED]

14 22. Dr. Goldberg argues that creating objects in object-oriented programming  
15 languages is common practice. This is true. However, objects are not side effects of object-  
16 oriented programming. They are data structures that people create and that are explicitly  
17 programmed to record information. Thus, if data is stored in an object, it is because a programmer  
18 made an explicit decision to record that information. If a system intercepts content from  
19 communications, it is not part of the ordinary course of business simply because the intercepted  
20 content is stored in an object.

21 23. Dr. Goldberg argues that [REDACTED]  
22 [REDACTED]  
23 [REDACTED]

24  
25 \_\_\_\_\_  
26 <sup>15</sup> [REDACTED]  
27 [REDACTED]  
28 [REDACTED].



1 [REDACTED] Information stored in a  
2 database is not part of the code. While the stored data may map to what is implemented in objects  
3 in the code, it is not an object-oriented programming object itself.

4 **2. Alternative methods** [REDACTED]

5 24. There are alternative methods for [REDACTED]  
6 [REDACTED].

7 a. For example, rather than [REDACTED]  
8 [REDACTED]  
9 [REDACTED]  
10 [REDACTED].

11 b. Additionally, [REDACTED]  
12 [REDACTED].

13 c. The fact that these alternative methods of [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED]  
18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED].<sup>17</sup>

22 **3. Code-Based Devices**

23 25. Dr. Goldberg argues that he has never heard the term "code-based device" before  
24 (¶ 8). However, code-based or software devices are quite common, and just because Dr. Goldberg  
25 has not heard the term does not mean they cannot exist.  
26

27 <sup>16</sup> See, e.g. section "Dissection of an Object" in Hasin Hayder, *Object-Oriented Programming*  
with PHP5(Packt Publishing Ltd, 2007) .

28 <sup>17</sup> See App. 1522-23 (Himel Decl. ¶ 44); App. 1697-98, 1699-1700, 1702 (Fechete Decl. ¶¶ 13-  
14, 18, 26).

1           26. For example, one domain where the public is hearing a lot about code-based  
2 devices now is in the Volkswagen emissions controversy.<sup>18</sup> Indeed, a Google News search for  
3 “Volkswagen ‘software device’” returned about 37,400 results.<sup>19</sup> I understand that the  
4 Environmental Protection Agency has stated that software can constitute a “device” as that term  
5 is used in government regulations.<sup>20</sup>

6           27. The term “software device” has also appeared in US patents<sup>21</sup> and publications  
7 from NASA.<sup>22</sup>

8           **B.** [REDACTED]

9           28. I understand that Mr. Himel claims that [REDACTED]  
10 [REDACTED]  
11 [REDACTED]  
12 [REDACTED]

13           29. I analyzed [REDACTED]  
14 [REDACTED].

15           30. Based upon [REDACTED]  
16 [REDACTED].

17           31. In [REDACTED]  
18 [REDACTED]  
19 [REDACTED]  
20 [REDACTED]:

21 \_\_\_\_\_  
22 <sup>18</sup> See Slade Decl. Ex 12 (Goldberg Depo. Tr. at 171:10-177:22.)

23 <sup>19</sup> Slade Decl. Ex 13.

24 <sup>20</sup> See *id.*; see also “EPA, California Notify Volkswagen of Clean Air Act Violations / Carmaker  
25 allegedly used software that circumvents emissions testing for certain air pollutants,” available at  
26 <http://yosemite.epa.gov/opa/admpress.nsf/a883dc3da7094f97852572a00065d7d8/dfc8e33b5ab162b985257ec40057813b!OpenDocument> (“As described in the [Notice of Violation], a  
27 sophisticated software algorithm on certain Volkswagen vehicles detects when the car is  
28 undergoing official emissions testing, and turns full emissions controls on only during the test . . .  
The software produced by Volkswagen is a “defeat device,” as defined by the Clean Air Act.”)

<sup>21</sup> See, e.g., U.S Patent No. 6,032,223.

<sup>22</sup> See, e.g., V. Kreinovich, A. Bernat, E. Villa, Y. Mariscal, “Parallel computers estimate errors  
caused by imprecise data,” *Interval Computations*, 1991, No. 2, pp. 31–46. (available at  
<http://ntrs.nasa.gov/search.jsp?R=19930068753>).

<sup>23</sup> See App. 1522-23 (Himel Decl. ¶ 44).

<sup>24</sup> See, e.g., FB000014213; FB000027011; FB000027015; FB000027018.

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33. These show

34. Even if this information is not

35. Dr. Goldberg stated in his deposition that he

36. I note that, in the context of Facebook's

<sup>25</sup>

<sup>26</sup> Slade Decl. Ex. 12 (Goldberg Depo. Tr. at 139:10-143:6).

<sup>27</sup> FB000027190.

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[REDACTED]

37. Indeed, the only [REDACTED]

[REDACTED]<sup>29</sup>

**V. ALLEGED “VARIABILITY”**

38. At paragraphs 60 and 63 of his report, Dr. Goldberg argues that alleged “variability” in what he calls “interceptions” and “uses” of Private Message content would require a “a message-by-message analysis” to determine “whether such alleged interceptions” or “uses” occurred. Mr. Himel addresses these same “variabilities” in his declaration.<sup>30</sup> However, most of these “variabilities” simply track the same scenarios that Dr. Goldberg incorrectly argues makes identification of Class members impossible. As I explain in Section III of the this rebuttal report,

[REDACTED].

39. I note that while Dr. Goldberg claims that [REDACTED]

[REDACTED]

[REDACTED]<sup>32</sup>.

<sup>28</sup> App. 1943 (Goldberg Report, ¶ 9).  
<sup>29</sup> See App. 1964 (Goldberg Report ¶ 44); App. 1697-98, 1699-70, 1702 (Fechete Decl. ¶¶ 13-14, 18, 26); Golbeck Opening Report ¶¶ 44-54.  
<sup>30</sup> See, generally App. 1508-33 (Himel Decl.)  
<sup>31</sup> Slade Decl. Ex. 12 (Goldberg Depo. Tr. at 80:21-23) [REDACTED]

[REDACTED].  
Slade Decl. Ex. 12 (Goldberg Depo. Tr. at 81:8-86:17).

1           40.     Several of these additional variabilities do not overlap with the scenarios Dr.  
2 Goldberg incorrectly argues makes identification of Class members impossible. I address each as  
3 follows:

4           a.     [REDACTED]  
5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED] and therefore the message would not be within the Class  
8 definition.

9           b.     [REDACTED]  
10 [REDACTED]  
11 [REDACTED]  
12 [REDACTED] and therefore the message would not be within the Class definition.

13          c.     [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED] and therefore the message would not be within the  
17 Class definition.

18          d.     [REDACTED]  
19 [REDACTED]  
20 [REDACTED] and  
21 are not relevant to this action.

22          e.     In summary, [REDACTED]  
23 [REDACTED]. Also, Dr. Goldberg and Mr.  
24 Himel are correct that not all Private Messages, or even all Private Messages that include URLs,  
25 are included within the Class. However, these “variabilities” do not cause any complexities  
26 related to identifying Class members or resolving issues related to Class members because each  
27 of these “variabilities” [REDACTED]  
28 [REDACTED].

1 **VI. WHETHER PRIVATE MESSAGE CONTENT WAS INTERCEPTED IN**  
2 **TRANSIT OR IN STORAGE**

3 41. Messages are in transit when they are intercepted. They are delivered [REDACTED]  
4 [REDACTED].<sup>33</sup> Dr.

5 Goldberg argues that messages that are in memory are in “storage” and that he has never heard of  
6 the two being distinguished in any context. However, the distinction is commonly made.

7 42. As a few examples, Microsoft distinguishes the two on their Windows website<sup>34</sup> as  
8 does PC Magazine<sup>35</sup> and numerous other websites.<sup>36</sup> Page 370 of the textbook, “Discovering  
9 Computers,” by Misty E. Vermaat, *et al.* distinguishes them.<sup>37</sup> While Dr. Goldberg may be  
10 unaware that these are treated differently, such a distinction does in fact exist.

11 43. Indeed, if Dr. Goldberg's position were correct, it would be impossible for a  
12 computer-based violation of wiretap law, since computers must have data in memory in order to  
13 operate on it.

14 **VII. FACEBOOK’S USE OF PRIVATE MESSAGE CONTENT IN THE SOCIAL**  
15 **GRAPH AND TARGETED ADVERTISING**

16 44. I note that Facebook states the following concerning my deposition testimony:  
17 [REDACTED]  
18 [REDACTED].<sup>38</sup>

19  
20 <sup>33</sup> See Golbeck Opening Report ¶¶ 30-31.

21 <sup>34</sup> See “Memory and storage,” available at <http://windows.microsoft.com/en-us/windows7/memory-and-storage>.

22 <sup>35</sup> See “Definition of: storage vs. memory,”  
23 <http://www.pcmag.com/encyclopedia/term/63352/storage-vs-memory> (“The difference between  
24 storage and memory is that non-volatile storage is used to hold programs and data until purposely  
25 changed or removed by the user, while volatile memory is a temporary workspace for retrieving  
26 programs and processing data. Storage consists of drives (hard, optical, USB, solid state).  
27 Memory consists of RAM chips that lose their content when power is removed.”)

28 <sup>36</sup> See, e.g., “THE DIFFERENCE BETWEEN MEMORY AND STORAGE” available at  
[http://www.technick.net/public/code/cp\\_dpage.php?aiocp\\_dp=guide\\_ung\\_01\\_003](http://www.technick.net/public/code/cp_dpage.php?aiocp_dp=guide_ung_01_003) (“People often  
confuse the terms memory and storage, especially when describing the amount they have of each.  
The term memory refers to the amount of RAM installed in the computer, whereas the term  
storage refers to the capacity of the computer’s hard disk.”); “What's the Difference Between  
Memory and Storage?,” available at <http://www.tucows.com/article/593>.

<sup>37</sup> Vermaat, M., Sebok, S., Freund, S., Campbell, J. and Frydenberg, M., “Discovering  
Computers” Cengage Learning (2016).

<sup>38</sup> Opp. at 25:2-4.

1           45.    My testimony cited is taken grossly out of context in two ways. First, I never  
2 stated that [REDACTED]

3 [REDACTED]

4 [REDACTED] It was never clarified.<sup>39</sup> It is my opinion that [REDACTED]

5 [REDACTED].

6           46.    Secondly, I opined that [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]<sup>42</sup>

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14 Dated: February 19, 2016

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<sup>39</sup> App. 1096-1101 (Golbeck Depo. Tr. at 103:13-108:16).

<sup>40</sup> App. 1209-1210 (Golbeck Depo. Tr. at 216:7-217:5) [REDACTED]

26 [REDACTED]

27 [REDACTED]

<sup>41</sup> App. 1210-1216 (Golbeck Depo. Tr. at 217:6-223:6).

<sup>42</sup> App. 1209-1212 (Golbeck Depo. Tr. at 216:7-219:3).



Jennifer Golbeck

**Appendix A: List of Materials Relied On**

I relied on the following documents and materials in forming my opinions:

Documents from *Campbell et al. v. Facebook, Inc.*:

Facebook's Second Supplemental Responses and Objections to Plaintiffs' Narrowed Second Set of Interrogatories, and Exhibit A thereto

Expert Report of Dr. Benjamin Goldberg submitted with Defendant Facebook Inc.'s Opposition to Plaintiff's Motion for Class Certification

Declaration of Alex Himel in Support of Defendant Facebook, Inc.'s Opposition to Plaintiffs' Motion for Class Certification

Declaration of Dan Fechete in Support of Defendant Facebook, Inc.'s Opposition to Plaintiffs' Motion for Class Certification

Defendant Facebook, Inc.'s Opposition to Plaintiffs' Motion for Class Certification

Deposition of Dr. Jennifer Golbeck (Dec. 16, 2015)

Deposition of Dr. Benjamin Goldberg (Feb. 2, 2016)

Report of Dr. Jennifer Golbeck in Support of Plaintiffs' Motion for Class Certification

Plaintiffs' Motion for Class Certification

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FB000006088

FB000012006

FB000012557

FB000014213

FB000027011

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FB000027018

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FB000027191

Source Code Produced by Facebook



Other Materials:

<https://www.facebook.com/business/help/133609753380850>

Hasin Hayder, *Object-Oriented Programming with PHP5* (Packt Publishing Ltd, 2007)

www.google.com (search for “Volkswagen ‘software device’”)

“EPA, California Notify Volkswagen of Clean Air Act Violations / Carmaker allegedly used software that circumvents emissions testing for certain air pollutants,” available at

<http://yosemite.epa.gov/opa/admpress.nsf/a883dc3da7094f97852572a00065d7d8/dfc8e33b5ab162b985257ec40057813b!OpenDocument>

U.S Patent No. 6,032,223

V. Kreinovich, A. Bernat, E. Villa, Y. Mariscal, “Parallel computers estimate errors caused by imprecise data,” *Interval Computations*, 1991, No. 2, pp. 31–46. (available at

<http://ntrs.nasa.gov/search.jsp?R=19930068753>)

<http://windows.microsoft.com/en-us/windows7/memory-and-storage>

<http://www.pcmag.com/encyclopedia/term/63352/storage-vs-memory>

[http://www.technick.net/public/code/cp\\_dp.php?aiocp\\_dp=guide\\_umg\\_01\\_003](http://www.technick.net/public/code/cp_dp.php?aiocp_dp=guide_umg_01_003)

<http://www.tucows.com/article/593>

Vermaat, M., Sebok, S., Freund, S., Campbell, J. and Frydenberg, M., “Discovering Computers” Cengage Learning (2016).

# **EXHIBIT 2**

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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
OAKLAND DIVISION

MATTHEW CAMPBELL, MICHAEL HURLEY, )  
and DAVID SHADPOUR, )

Plaintiffs, )

vs. ) Case No.  
C 13-05996 PJH

FACEBOOK, INC., )

Defendant. )

----- )

VIDEOTAPED DEPOSITION OF MATTHEW D. CAMPBELL  
San Francisco, California  
May 19, 2015  
Volume I

Reported by:  
CARLA SOARES  
CSR No. 5908  
Job No. 2067810  
Pages 1 - 294

1      teleconference last week, when was the last time you      09:11:43  
2      spoke with any of your attorneys in that case?

3             A      I've been in contact with Mr. Slade  
4      roughly once a month for the last -- well, since the  
5      suit was filed; more frequently than that over the      09:11:55  
6      last month or so as we've prepared for this and  
7      through discovery.

8             Q      Okay. And let's focus on yesterday's prep  
9      session. Approximately how long did that meeting  
10     last?      09:12:15

11            A      Five hours. Somewhere in that ballpark.

12            Q      Did you discuss your deposition today with  
13     anyone other than your attorneys and/or their staff?

14            A      Not substantively, no.

15            Q      Put aside substantively. Did you      09:12:33  
16     discuss --

17     [REDACTED]

19            Q      Okay. Anybody else?

20            A      No.      09:12:40

21            Q      Did you review any documents in preparing  
22     for this deposition, either at the prep meeting last  
23     week or your meeting yesterday?

24            A      Yes.

25            Q      Did your review of any documents refresh      09:12:59

1 A I do. 10:41:10  
2 Q What is it?  
3 A These are the corrected objections and  
4 responses to the interrogatories that were directed  
5 to me. 10:41:17  
6 Q And did you review these responses before  
7 they were provided to Facebook?  
8 A I did.  
9 Q Did you make corrections?  
10 A Nothing specific that I can think of. I 10:41:34  
11 reviewed them and discussed with my attorneys.  
12 Q And did you take care to make sure the  
13 responses were accurate to the best of your  
14 recollection?  
15 A Yes. Yes, I did. I'm just trying to 10:41:48  
16 think if there was anything beyond that.  
17 Q And, Mr. Campbell, if you could look at  
18 Interrogatory No. 1, and specifically your response  
19 which is found on page 3 of the document, I'll just  
20 read the second-to-last sentence. "Plaintiff's 10:42:10  
21 account" -- with Facebook -- "was established on  
22 January 7th, 2009."  
23 Is that your best recollection as to when  
24 you signed up for Facebook?  
25 A Yes. 10:42:21

4 Q I don't need to probe your international  
5 travel habits, fortunately, unless you're claiming 12:02:15  
6 to represent an international class. Then we'll  
7 have another depo.

8 So, Mr. Campbell, do you have an  
9 understanding of what your duties and obligations  
10 would be as a class representative in this case? 12:02:25

11 A Yes.

12 Q What are they?

13 A To act in the best interest of the class,  
14 observe my fiduciary duty to the rest of the class,  
15 work with counsel, again, in the best interest of 12:02:45  
16 the class as far as any decisions, any decisions on  
17 pleadings or the content of pleadings, et cetera.

18 Q And what do you mean by "decisions on  
19 pleadings"? What role in that respect?

20 A Reviewing the complaint before it was 12:03:07  
21 filed, reviewing interrogatory responses, providing  
22 documents to counsel for purposes of discovery.

23 Q Do you know what class you're seeking to  
24 represent in this case?

25 A To my understanding, it is the subset of 12:03:31

1 identification and are attached hereto.) 16:48:10

2 BY MR. CHORBA:

3 Q Mr. Campbell, the reporter has handed you

4 two documents. We've marked them in sequence

5 Exhibits 9 and 10. 12:07:56

6 Exhibit 9 is a document captioned "Class

7 Action Complaint." It's file-stamped at the top

8 December 30, 2013. I'll represent to you that's

9 your original complaint against Facebook in this

10 action. 12:08:10

11 Exhibit 10 is filed April 25th, 2014,

12 titled "Consolidated Amended Class Action

13 Complaint."

14 Let's start with Exhibit No. 9. Do you

15 recognize this document? 12:08:30

16 A Yes.

17 Q Is this your original complaint against

18 Facebook in this action?

19 A Yes.

20 Q And you reviewed this document before it 12:08:35

21 was filed?

22 A Yes.

23 Q Did you -- do you recall whether or not,

24 yes or no, you made any changes to this before it

25 was filed? 12:08:42

1 A That was a decision by one of the 12:17:18  
2 attorneys involved or all of the attorneys involved.  
3 Q Did you review the initial disclosures  
4 served on behalf of the plaintiffs in this case?  
5 A Yes. 12:17:30  
6 Q Did you review the supplemental initial  
7 disclosures?  
8 A Yes.  
9 Q Did you review the responses served on  
10 your behalf to Facebook's interrogatories? 12:17:39  
11 A Yes.  
12 Q And did you review a set of corrected  
13 responses to Facebook's interrogatories?  
14 A Yes.  
15 Q How about the document requests, responses 12:17:49  
16 to the document requests? Did you review those  
17 before they were filed?  
18 A Yes.  
19 Q Did you sign any of these documents?  
20 A I don't recall one way or the other. 12:18:03  
21 Q Do you remember reviewing all these  
22 responses for accuracy?  
23 A Yes.  
24 Q Did you make every effort to make sure  
25 they were correct? 12:18:12

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1 increasing the "Like" count on that page? 14:33:13

2 A No, the interception itself is the breach  
3 of privacy.

4 Q And do you believe that Facebook is  
5 continuing to intercept URLs through messages? 14:33:24

6 A My understanding is that they are not, at  
7 least not in the -- my understanding is that they're  
8 not continuing the same behavior, which is why I've  
9 continued to use the messaging service.

10 Q What's the -- when you say "same 14:33:38  
11 behavior," I'm just trying to understand. What is  
12 the specific behavior you're talking about?

13 A The interception -- the access of the  
14 content of the messages and the related interception  
15 of any URLs that are contained therein. 14:33:53

16 Q In a way that increases the "Like" count  
17 of that URL?

18 A No. Again, that's a separate issue  
19 whether there's an increase. I'm saying from the  
20 moment when I hit "Send," my understanding is that 14:34:11  
21 Facebook is no longer intercepting that URL in any  
22 form, regardless of whether Facebook is still going  
23 and increasing the "Like" count officially as a  
24 result.

25 Q We discussed earlier how -- and you 14:34:26

1 before I hit "Send." I assume that until I hit 14:36:49  
2 "Send," Facebook isn't doing anything with it.  
3 BY MR. CHORBA:  
4 Q Not even rendering a URL preview?  
5 A Obviously I don't assume that they don't 14:37:00  
6 do that since we've discussed it. I know that they  
7 do that.  
8 Q So they're doing something.  
9 A Again, my understanding was that was just  
10 a function of the software. It was -- and it was 14:37:08  
11 something that the user could choose to include or  
12 not include.  
13 Q On what basis do you base your testimony  
14 that there were no more interceptions of messages  
15 containing URLs after October 2012? 14:37:21  
16 A It's my understanding that's what Facebook  
17 said.  
18 Q Where?  
19 A I believe it was discussed in The Wall  
20 Street Journal article. If not, it might have been 14:37:34  
21 information or assurances I received maybe from  
22 somebody else. I assumed it was in The Wall Street  
23 Journal article. That was my understanding, is that  
24 Facebook had already said, "We're not doing that  
25 anymore." 14:37:56

1 Q And by "doing that," do you mean just 14:37:57  
2 intercepting generally or incrementing the "Like"  
3 count through URLs shared over private message?

4 A Both.

5 Q Have you done anything to verify whether 14:38:13  
6 or not Facebook is continuing to engage in the  
7 conduct that you challenge in the complaint?

8 MR. CARNEY: Object to form.

9 THE WITNESS: No. I assume that -- no.

10 BY MR. CHORBA: 14:38:37

11 Q Mr. Campbell, do you have any information  
12 or any basis of any kind that Facebook has targeted  
13 an ad to you based on something that you put in a  
14 message on Facebook?

15 A That Facebook itself has targeted an ad to 14:38:51  
16 me?

17 Q Yes.

18 A Online ads or --

19 Q Any type of advertising.

20 A As I testified earlier, I don't see ads on 14:39:01  
21 pretty much any website. So, no, I haven't seen  
22 that.

23 Q You mentioned that some websites, they  
24 sometimes sneak through. In those instances -- I'm  
25 trying to figure out if you have any basis for 14:39:13

Page 201

1 the actual messages downloaded. But if you could 14:42:43  
2 just look quickly at those pages, make sure I have  
3 the stack correctly.

4 A Yes.

5 Q And again, I know that we're carving out 14:42:55  
6 the Blue Hog Report page and [REDACTED] but  
7 are these all of the Facebook messages that you've  
8 sent, or are these just the ones containing URLs?

9 A They appear to be just the ones containing  
10 URLs. 14:43:13

11 Q But again, that wasn't something you  
12 culled from the full list; someone else did that?

13 A Correct. I provided all of them to  
14 counsel.

15 Q Is it your claim in this case that 14:43:26  
16 Facebook unlawfully scanned or intercepted all of  
17 these messages or just some?

18 A All of them that fall within the time  
19 frame up to the date where Facebook stopped scanning  
20 and intercepting the messages. 14:43:41

21 Q So that October 2012 time frame?

22 A Somewhere in there.

23 Q And do you know the information that's  
24 blocked out here or redacted?

25 MR. CARNEY: Object to form. 14:43:59

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I, the undersigned, a Certified Shorthand Reporter of the State of California, do hereby certify:

That the foregoing proceedings were taken before me at the time and place herein set forth; that any witnesses in the foregoing proceedings, prior to testifying, were administered an oath; that a record of the proceedings was made by me using machine shorthand which was thereafter transcribed under my direction; that the foregoing transcript is a true record of the testimony given.

Further, that if the foregoing pertains to the original transcript of a deposition in a Federal Case, before completion of the proceedings, review of the transcript [X] was [ ] was not requested.

I further certify I am neither financially interested in the action nor a relative or employee of any attorney or any party to this action.

IN WITNESS WHEREOF, I have this date subscribed my name.

Dated: 05/29/2015

Carla Soares

CARLA SOARES

CSR No. 5908

# **EXHIBIT 3**

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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
OAKLAND DIVISION

MATTHEW CAMPBELL, MICHAEL HURLEY, )  
and DAVID SHADPOUR, )

Plaintiffs, )

vs. ) Case No.  
C 13-05996 PJH

FACEBOOK, INC., )

Defendant. )

-----)

VIDEOTAPED DEPOSITION OF MICHAEL HURLEY  
San Francisco, California  
Thursday, July 9, 2015  
Volume I

\*\*\* CONFIDENTIAL \*\*\*

Reported by:  
CARLA SOARES  
CSR No. 5908  
Job No. 2082438  
Pages 1 - 193



1 if that URL -- if that website had a "Like" button 10:10:44  
2 social plug-in, that Facebook was scanning the URL  
3 and then increasing the number that appeared next to  
4 the "Like" button social plug-in on that website?

5 MR. RUDOLPH: Objection. Form. Calls for 10:11:03  
6 a legal conclusion.

7 THE WITNESS: Yes, that's my  
8 understanding.

9 BY MR. JESSEN:

10 Q Do you have an understanding as to whether 10:11:41  
11 or not Facebook has stopped that alleged conduct?

12 A I don't.

13 Q Do you understand that when you send a  
14 Facebook message, Facebook has certain electronic  
15 processes in place in order to process that message? 10:12:05

16 MR. RUDOLPH: Objection. Form.

17 THE WITNESS: Could you define "process"?

18 BY MR. JESSEN:

19 Q Yeah. Let me go through some examples.

20 So you understand that when you send a 10:12:34  
21 Facebook message, Facebook has electronic processes  
22 in place in order to ensure that your message is  
23 delivered to the intended recipient?

24 MR. RUDOLPH: Objection. Form. Vague as  
25 to "electronic processes." 10:12:51

1 A Yes. 10:36:55

2 Q That's what you're saying?

3 A The number went up.

4 Q Understood.

5 There are two other plaintiffs in this 10:37:01

6 case, Matthew Campbell and Mr. David Shadpour.

7 Do you know either of those gentlemen?

8 A No.

9 Q You've never met them?

10 A No. 10:37:12

11 Q Have you ever communicated with either of

12 them?

13 A No.

14 Q And again, and forgive me if I asked this

15 earlier, but besides your attorneys, have you 10:37:23

16 discussed this lawsuit with anyone else?

17 A No.

18 Q Do you have an understanding of what your

19 duties and obligations would be as a class

20 representative in this case? 10:37:47

21 A Yes.

22 Q What's your understanding?

23 A My understanding is that I need to

24 represent the class members as best I can, keep up

25 to date and involved in the actual case, complaint, 10:38:02

1 and pursue it vigorously. 10:38:07

2 Q What is the class that you're seeking to  
3 represent in this case?

4 A All U.S. citizens with Facebook accounts  
5 that sent messages -- sent or received private 10:38:22  
6 messages with a URL in the time period listed on the  
7 complaint.

8 Q I think you've testified earlier, but your  
9 understanding of the time period is starting two  
10 years before the suit was filed and going up to the 10:38:43  
11 time that the conduct you're complaining about  
12 stopped?

13 A Correct. That is my understanding.

14 Q So in your view, a Facebook user who sent  
15 or received a Facebook message with a URL in it 10:39:08  
16 would be a member of the class that you're proposing  
17 to represent?

18 A Yes.

19 Q What about someone who sent or received a  
20 Facebook message that did not contain a URL? Are 10:39:19  
21 they within the scope of your proposed class?

22 MR. RUDOLPH: Objection. Calls for a  
23 legal conclusion.

24 THE WITNESS: Not as I understand the  
25 class. 10:39:33

1 Q And then did you have a -- was Mr. Slade 10:43:59  
2 on that -- strike that.

3 Was that a telephone conversation?

4 A Yes, that was a telephone conversation.

5 Q And was that just a telephone conversation 10:44:10  
6 between you and Ms. Gardner?

7 A Yes.

8 Q And then subsequent to that, you had a  
9 phone conversation with Ms. Gardner and Mr. Slade?

10 A Yes. 10:44:20

11 Q Were there other conversations you had  
12 with Ms. Gardner or Mr. Slade or any of the other  
13 attorneys before filing suit?

14 A Not that I recall.

15 Q And other than what we've already been 10:44:34  
16 discussing, you don't recall any other telephone  
17 conversations with counsel since you filed suit?

18 A Not other than Melissa Gardner, no.

19 Q How often do you communicate with your  
20 attorneys about the case regarding -- strike that. 10:44:53

21 How often do you and your attorneys  
22 contact each other by email about the case?

23 A I don't know the exact dates or times, but  
24 fairly often, usually for document delivery and  
25 such. 10:45:14

1 Q What do you mean by "document delivery"? 10:45:16

2 A Like copies for review of the complaints

3 and proceedings basically.

4 Q Before the lawsuit was filed on

5 December 30th, 2013, did you have any written 10:45:30

6 communications with Ms. Gardner regarding the case?

7 A Do you mean other than the complaint or --

8 Q Sure. We can exclude -- I understand you

9 reviewed the complaint --

10 A Yeah. 10:45:59

11 Q -- prior to its filing on December 30th,

12 2013. Was that emailed to you?

13 A Yes.

14 Q Other than that, communications relating

15 to the complaint, are there other written 10:46:10

16 communications with Ms. Gardner or any of the

17 attorneys who now represent you about the lawsuit?

18 A From before the lawsuit?

19 Q Correct.

20 A Not that I can recall. 10:46:21

21 Q How many emails were exchanged between you

22 and Ms. Gardner before the lawsuit was filed

23 regarding the complaint itself?

24 A I can't recall the exact number.

25 Q Did she email you a copy of the complaint? 10:46:42

1 A Yes. 10:46:45

2 Q And then you reviewed it?

3 A Correct.

4 Q And did you respond to that email in some  
5 way? 10:46:53

6 MR. RUDOLPH: I'm going to caution the  
7 witness not to reveal the contents of any  
8 attorney-client communications. But you can answer  
9 that question yes or no.

10 THE WITNESS: I don't believe that I 10:47:08  
11 responded. I think I probably talked to her over  
12 the phone the next -- on a Sunday.

13 THE VIDEO OPERATOR: Mr. Hurley, if you  
14 could please refrain from rolling the --

15 THE WITNESS: Sorry. 10:47:20

16 THE VIDEO OPERATOR: It just makes noise  
17 on the record.

18 THE WITNESS: Okay. Sure.

19 THE VIDEO OPERATOR: Thank you.

20 BY MR. JESSEN: 10:47:26

21 Q How soon did you receive a copy of the  
22 complaint via email before it was actually filed?

23 A I don't remember the exact -- the exact  
24 date. I mean, it was at least a few days before,  
25 I'm sure. 10:47:37

1 A Yes. I remember I -- yes. 11:06:09

2 Q Were you involved in the drafting of

3 either of these initial disclosures?

4 A How do you mean, "drafting"?

5 Q Well, did you participate in preparing 11:06:30

6 these in some way?

7 A Yes. I handed over my documents. I gave

8 what was asked.

9 Q Did you -- do you know, did you review

10 these initial disclosures at any time? 11:06:54

11 A Yeah, I -- I reviewed them.

12 Q Prior to the dates that they were served?

13 A Yes.

14 Q Did you review them for accuracy?

15 A Yes. 11:08:49

16 Q Did you make every effort to ensure that

17 these initials disclosures were correct?

18 A Yes.

19 Q Let's take a look at Exhibit 6, which is a

20 document titled "Plaintiff Michael Hurley's 11:09:03

21 Objections and Responses to Defendant Facebook,

22 Inc.'s First Set of Interrogatories."

23 Do you recognize this document?

24 A Yes.

25 Q What do you understand this to be? 11:09:20

1           A    Basically the -- I understand this to be           11:09:29  
2           the objections and responses to the first  
3           interrogatories that Facebook basically asked of  
4           my -- me through my counsel.

5           Q    I'm going to ask you the same series of           11:09:41  
6           questions I asked for the initial disclosures.

7           A    Okay.

8           Q    Sorry. Parts of this deposition may seem  
9           repetitive, but that's just the nature of it.

10                  Did you participate in drafting these           11:09:53  
11           responses to Facebook's interrogatories?

12           A    Yes.

13           Q    What role did you play?

14           A    I answered the interrogatories basically.  
15           It was done over the phone, if I remember correctly.           11:10:08

16           Q    You provided information to your counsel  
17           in order to answer the interrogatories?

18           A    Correct.

19           Q    Did you review these responses before they  
20           were served on Facebook?           11:10:18

21           A    Yes.

22           Q    Did you review them for accuracy?

23           A    Yes.

24           Q    And did you make every effort to ensure  
25           that the responses were correct?           11:10:26



1 A Yes. 11:10:31

2 Q Let's take a look at Exhibit 7.

3 For the record, this is a document titled

4 "Plaintiff Michael Hurley's First Supplemental

5 Objections and Responses to Defendant Facebook, 11:10:50

6 Inc.'s First Set of Interrogatories, Nos. 3, 6 and

7 7."

8 Do you recognize this document?

9 A Yes.

10 Q What's your understanding of what it is? 11:11:02

11 A These are -- well, my understanding is

12 that these are additional answers or basically

13 continuing answers that build upon the original that

14 was sent in on the interrogatories for 3, 6 -- or

15 No. 3, 6 and 7. 11:11:33

16 Q Did you also provide your counsel with

17 information, as you did on the initial responses, in

18 order to answer these interrogatories?

19 A Yes.

20 Q Did you review the responses before they 11:11:45

21 were served on Facebook?

22 A Yes.

23 Q Did you review them for accuracy?

24 A Yes.

25 Q Did you make every effort to ensure the 11:11:53

1 responses were correct? 11:11:55

2 A Yes.

3 Q Are you aware of any person who has

4 knowledge of facts that you believe support your

5 claims against Facebook in this action? 11:12:14

6 MR. RUDOLPH: Objection. Vague.

7 THE WITNESS: Do you mean outside of the

8 complaint or --

9 BY MR. JESSEN:

10 Q Yeah. What I mean is a human being. Are 11:12:56

11 you aware -- I'm trying to understand if you're

12 aware of the identity of a person who has

13 information that would support your claims in this

14 lawsuit.

15 MR. RUDOLPH: Objection. Vague. 11:13:20

16 THE WITNESS: Sorry. I'm still trying to

17 understand.

18 Do you mean just in general or --

19 BY MR. JESSEN:

20 Q Yeah. So let me break it down a little 11:13:55

21 bit.

22 I'm entitled to know what information you

23 have to support the claims you're making in this

24 case against Facebook. And I'm just trying to

25 understand, right now, are you aware of witnesses 11:14:07

1 The document marked as Hurley Exhibit 8 is 11:19:00  
2 Facebook's first set of requests for production of  
3 documents to Plaintiff Michael Hurley.

4 And Hurley Exhibit 9 is Plaintiff Michael  
5 Hurley's objections and responses to Defendant 11:19:28  
6 Facebook, Inc.'s first set of requests for  
7 production.

8 I first want to turn your attention to  
9 Exhibit 8. Have you ever seen this document before?

10 A Yes. 11:20:01

11 Q What's your understanding of what it is?

12 A These are Facebook's requests for, well,  
13 documents or information relating to the case from  
14 me.

15 Q To you? 11:20:15

16 A Yes. To me.

17 Q Did you review these requests?

18 A Yes.

19 Q And did you assist your attorneys in  
20 locating documents that were responsive to these 11:20:27  
21 requests?

22 A Yes.

23 Q Have you conducted a thorough search for  
24 all relevant documents?

25 A Yes. 11:20:43

1 Q Are you confident that you've provided all 11:20:44  
2 responsive documents?

3 A Yes.

4 Q What exactly did you do to search for  
5 responsive documents? 11:20:54

6 A I used a tool to basically copy my entire  
7 Facebook account, or messages as well, and then I  
8 used that to find all messages with URLs and passed  
9 that along to my counsel.

10 Q Anything else? 11:21:29

11 A Not that I can think of. I provided  
12 whatever was asked.

13 Q Do you think you would have any paper  
14 documents that would be relevant to your claims in  
15 this case? 11:22:05

16 A Not that I can think of.

17 Q What about electronic documents other than  
18 what you mentioned? Would you have any electronic  
19 documents other than, again, what you mentioned that  
20 would be relevant? 11:22:22

21 A Not that I can think of.

22 Q What about any relevant emails?

23 A Not that I can think of, no.

24 Q Can you think of any other area that --  
25 where you might have documents that are relevant to 11:22:40

1 minimize. 14:34:14

2 You claim you've been harmed. Have you

3 taken any steps to try to prevent -- minimize that

4 harm?

5 A I basically stopped using messaging, 14:34:26

6 Facebook messaging, outgoing, at least.

7 Q I'm sorry?

8 A I stopped sending messages. I received a

9 couple.

10 Q When did you stop sending them? 14:34:37

11 A Oh, gosh. To the best of my knowledge,

12 after I joined the complaint.

13 Q What specific relief are you seeking from

14 Facebook in this case?

15 MR. RUDOLPH: Objection. Calls for a 14:35:12

16 legal conclusion.

17 THE WITNESS: I'll just refresh my memory

18 a little bit with this.

19 BY MR. JESSEN:

20 Q I gather you're looking at Exhibit 7. 14:35:33

21 A Yes, Exhibit 7.

22 Q Okay.

23 A So as per my I guess supplemental response

24 to Interrogatory No. 7, I'm seeking -- I'm seeking

25 relief in the form of the statutory damages listed 14:36:25

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I, the undersigned, a Certified Shorthand Reporter of the State of California, do hereby certify:

That the foregoing proceedings were taken before me at the time and place herein set forth; that any witnesses in the foregoing proceedings, prior to testifying, were administered an oath; that a record of the proceedings was made by me using machine shorthand which was thereafter transcribed under my direction; that the foregoing transcript is a true record of the testimony given.

Further, that if the foregoing pertains to the original transcript of a deposition in a Federal Case, before completion of the proceedings, review of the transcript [x] was [ ] was not requested

I further certify I am neither financially interested in the action nor a relative or employee of any attorney or any party to this action.

IN WITNESS WHEREOF, I have this date subscribed my name.

Dated: July 16, 2015



CARLA SOARES

CSR No. 5908

# **EXHIBIT 4**

# Matt Campbell of the Blue Hog Report Keeps on Digging

by **Jan Cottingham**

Posted 6/8/2015 12:00 am

Updated 8 months ago

Matt Campbell, viewing Arkansas politics with the eyes of a liberal outsider trained in the law, has brought down three major public officials in the last two years because, he says, he doesn't like bullies and he thinks people should play by the rules.

People who know the founder of the Blue Hog Report blog — and there aren't that many because, after all, he ain't from around here — say the same thing.

“Matt cares about people,” says former state Rep. David Kizzia, a lawyer in private practice in Malvern. “Matt doesn't like bullies. I don't think that Matt has any positive regard for people who utilize their position or their resources to disadvantage others or to get over on folks. I think those sorts of things offend Matt's sensibilities.

“Matt usually has a good read of people,” said Kizzia, who met Campbell when both worked for the Pulaski County Public Defender's Office. “And Matt's usually pretty intuitive on picking up on hypocrisy. I think if someone lives in a brick house and is heaving bricks all over the place, Matt is more than happy to return the favor.”

Little Rock lawyer and activist David Couch calls Campbell, 36, “a pot stirrer.” Campbell, like Couch, thinks government should be transparent and politicians should be accountable to the people.

“You have to keep people on their toes and keep them accountable and take a position that's not necessarily politically popular but probably is popular with the people,” Couch says.

There's little doubt that five years after founding the Blue Hog Report blog, Campbell, who grew up in southwest Missouri, is keeping prominent people in



Arkansas on their toes — at least those prominent people who want to hold onto their government jobs.

His takedowns include a lieutenant governor (Mark Darr), a circuit judge (Mike Maggio) and, just six weeks ago, the head of Arkansas' largest school district (Dexter Suggs). (See [Matt Campbell's Greatest Hits: A Timeline of the Blue Hog Report.](#))

And he's done this all for free, or almost free. Someone who didn't know better bought an ad on the blog back in 2010 and a former Arkansan sent Campbell a check along with the exhortation to "keep up the good work." It was not, apparently, a very large check.

Campbell is a solo practitioner, the founder, two years ago, of Pinnacle Law Firm of Little Rock. His practice focuses on what he calls a "weird mix" of things — some oil and gas cases, a whistleblower case involving the Fort Smith Police Department.

"Anytime somebody feels they've been wronged by anything more powerful than them — I get a lot of those calls," he said in a recent interview.

But what Campbell does with the Blue Hog Report is investigative journalism, finding a loose thread and pulling, pulling, pulling until the target's misdeeds are finally unraveled.

It wasn't what he set out to do, Campbell says. "My dad always said that he thought I would be a lawyer. I think my mom kind of suspected I might go to med school. I didn't know what I wanted to be when I grew up until I kind of fell backward into what I'm doing now."

## **What He Did for Love**

Like so many other outsiders, Campbell moved to Arkansas for love. A summer job at the Little Rock law firm of Gill Elrod Ragon Owen & Sherman (now Gill Ragon Owen PA) brought him to Little Rock in 2005.

"The adorable receptionist who I'd met during my interview in December was at the front desk, smiling as I walked in," Campbell said on his Facebook page last month.

“Little did I know that I would wind up with a far longer relationship with Leabeth Campbell than I did with the firm. In the end, though, I’d say that was the most successful summer job I ever had.”

Now his wife, Leabeth Campbell is the daughter of Diane Suitt Gilleland, whom old-timers will remember as the director of the Arkansas Department of Higher Education from 1990 to 1997, approved for the post by then-Gov. Bill Clinton and replaced by Lu Hardin.

Leabeth didn’t want to leave Arkansas, so Campbell started looking for work in Little Rock after obtaining his law degree from Washington University School of Law in St. Louis in 2006.

“It took three or four months to find a job after I got here,” Campbell says. “I couldn’t get interviews with firms because it was always sort of ‘Why you coming in from out of state?’”

But he hit it off with Bill Simpson, Pulaski County’s chief public defender, and got a job as an investigator at the Public Defender’s Office, where he worked for three years. He moved on to the Arkansas Supreme Court in 2009, serving as an assistant criminal justice coordinator.

In 2010, Campbell and Jeff Woodmansee co-founded the Blue Hog Report, a blog devoted to politics.

“2010 was when Vic Snyder retired, and there were five candidates running on the Democrats’ side for his seat” in Congress, Campbell says. “I didn’t really have the free time and the flexibility to help any specific campaign, so it was almost just sort of a news aggregator for me at first.

“It’s funny to go back and look at how superficial a lot of the first posts were because they were sort of that old-style of blogging, ‘Here’s a news link. Here’s a quote from it. What do you think?’”

Campbell wears the term “liberal” proudly. However, “I do sort of push back at the [phrase] ‘Democrat blogger.’ And that label is probably my own fault for calling the

blog Blue Hog Report. People ignore the stories you do that actually call Democrats out.”

“I look into Democrats,” he adds later. “The thing is, on a level like on these statewide office levels, where anybody would care, I didn’t find anything. And now there are no statewide Democrats.”

(The Blue Hog Report was inactive during the two years leading up to Democratic State Treasurer Martha Shoffner’s arrest for bribery and extortion.)

Asked to codify his politics in 50 words, Campbell shared the following by email:

“I believe in Progressivism as originally conceived: that improvements in education, science and technology lead to a betterment of society, and that government’s chief role should be to support these advancements. I believe in transparency, New Keynesian economics, and that skepticism is a healthy default position in all things political.”

In the spring of 2011, the Blue Hog Report, making free use of the state Freedom of Information Act, targeted legislative expenditure reimbursements and Secretary of State Mark Martin’s use of a state vehicle.

The Arkansas Republican Party pushed back, filing FOI requests for the employment, phone and email records of Campbell, then working at the state Supreme Court, and Jeff Woodmansee, then an employee at the University of Arkansas at Little Rock Bowen School of Law Library.

Campbell says the GOP tried to get him fired. Doyle Webb, party chairman, has a different take:

“The Republican Party of Arkansas issued FOIAs to the Judicial Department of Arkansas to determine if Mr. Campbell was conducting partisan political activity during normal work hours while an employee of the state of Arkansas,” Webb said in an email. “We do not know the basis for his leaving or whether or not he was terminated from the Judicial Department for illegal political activity, but his political activity did cease and he gained employment elsewhere.”

Campbell, who denies operating the blog while on the state's dime, shut down the Blue Hog Report in May 2011 and maintained a low profile until opening Pinnacle Law Firm in 2013. Now his own boss, Campbell revived the blog in May 2013.

“It was no big deal to me to keep it shut down while I was [at the Supreme Court] other than, I guess, some irritation that I knew people felt like they had won,” he says. “But the irony is they acted like it was never going to come back. So then they had two years of rope to hang themselves, and that's exactly what Mark Darr did.”

## **Dark Secrets**

With the Blue Hog Report 2.0, Campbell posts less often but seeks to make every post count. He bases his reports on meticulous research, which he enjoys. “I hate the unanswered questions, and I'll keep digging until I find the answer, just for myself.”

Sometimes someone he knows will pose a question, or he'll just be curious about something. And sometimes, it's something else entirely.

“I guess it goes back to how small Arkansas is. Everybody seems to know something about someone,” Campbell says. “It seems like everybody has a dark secret with sort of varying levels of how dark, at least one about somebody. And it seems like eventually the person they have a secret about will do something to make them mad and then somebody feels the need to get that story out there.”

And when they do, they turn to Campbell.

Max Brantley of the Arkansas Blog admires Campbell's work. “It's pretty rare in the business of providing information where you can have measurable impact, and there's no doubt he has.”

And there's this, Brantley says: People in public service who might be inclined to corruption “know that there's somebody out there digging through the minutia and matching up records with other events and doing this kind of work. It's a valuable thing.”

Political columnist John Brummett says Campbell and the Blue Hog Report have had

a tremendous impact on Arkansas.

“I think there are people in state government taking special pains to behave because of the Blue Hog. And it may be more than state government since he’s delved into Little Rock school issues,” Brummett says. “I think people know that this guy is liable to turn his attention to them, and if he picks them, they’re in trouble if they’ve done anything wrong.”

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[Arkansas Business](#)

# **EXHIBIT 5**

# Matt Campbell's Greatest Hits: A Timeline of the Blue Hog Report

by **Jan Cottingham**

Posted 6/8/2015 12:00 am

Matt Campbell has broken a number of important stories that have led to resignations of public figures: Lt. Gov. Mark Darr, Circuit Judge Michael Maggio and interim Little Rock School Superintendent Dexter Suggs. (see [Matt Campbell of the Blue Hog Report Keeps on Digging.](#))

But reporting done by other news outlets, particularly the Arkansas Democrat-Gazette and the Arkansas Blog, has magnified the Blue Hog Report's impact. One of the best examples of this synergy are reports on legislators' expense reimbursements.

- **March 31, 2010** — The Blue Hog Report goes live.
- **June 3, 2010** — The Arkansas Democrat-Gazette notes Blue Hog for the first time, in an article about the attribution of a quote in a campaign ad in the 1st Congressional District race.
- **Sept. 29, 2010** — Campbell turns his attention to then-state Rep. Mark Martin and his requests for expense reimbursements, alleging that Martin was using his home office, for which he was reimbursed by the state, in his campaign for secretary of state, a position he'd go on to win. A Martin spokesman said the reimbursements were for renting space to himself from a separate office. It's one of many posts Campbell will make over the years about Martin. Max Brantley's Arkansas Blog cites Campbell's report in one of its first mentions of the Blue Hog Report.
- **March 16, 2011** — Campbell reports the monthly billings to the state of 30 Arkansas House Republicans, ranging from \$1,200 to \$2,350, for the legislators to — essentially — rent their home offices to themselves, though they're labeled "reimbursements."
- **March 18, 2011** — In a post headlined "Sunlight Is the Best Disinfectant: A Look at Reimbursements," Campbell notes that "salary padding under the guise of

‘reimbursements’ is about the only thing that has bi-partisan support, year in and year out; according to records requested by Blue Hog Report, only five legislators — four Democrats and one Republican — are not receiving statutory reimbursements this year.” And he lays out a case for why the reimbursements circumvented the intent of Amendment 70 to the state Constitution, approved by voters in 1992 and which sought to prevent expense abuse after the scandal involving state Attorney General Steve Clark in 1990.

- **May 12, 2011** — Campbell reports that Martin’s office keeps no mileage and fuel logs on the office’s vehicles. He learned this after filing an Arkansas Freedom of Information Act request in an effort to determine whether the office had bought a vehicle for Martin or his chief of staff, Doug Matayo, to use to travel between their homes in northwest Arkansas and the Capitol in Little Rock.
- **May 19, 2011** — The Democrat-Gazette confirms the lack of record-keeping at the Secretary of State’s Office, citing the Blue Hog Report.
- **May 26, 2011** — The Arkansas Blog reports that the Arkansas Republican Party filed FOI requests for the employment, phone and email records of Campbell, then working at the state Office of the Criminal Justice Coordinator, and Jeff Woodmansee, co-founder of the Blue Hog Report and an employee at the University of Arkansas at Little Rock Bowen School of Law Library.
- **May 27, 2011** — “An Arkansas political party is using the state Freedom of Information Act to delve into bloggers’ actions as state employees,” the Democrat-Gazette reports. “The enormous volume of opposition research being conducted by Mr. Campbell, along with the timing of certain blog and social-media posts, prompted the party to verify whether this partisan political behavior is occurring on the state dime,” state Republican Party spokesman Katherine Vasilos says. The paper says Campbell has decided to stop blogging.
- **May 28, 2011** — The D-G reports that the only email given to the state GOP doesn’t indicate that Campbell or Woodmansee posted to the Blue Hog Report on state time.



- **May 2011-May 2013** — The Blue Hog Report goes dark.
- **Sept. 26, 2011** — The Arkansas Public Law Center files suit challenging legislators' expense reimbursements as an illegal exaction.
- **April 3, 2012** — A judge approves a settlement of the center's suit that curtailed lawmakers' reimbursements and required legislators to more thoroughly document expense reimbursement requests.
- **May 6, 2013** — He's baaaack! Campbell cites Facebook posts by Secretary of State Mark Martin from Prairie Grove, his home, as evidence that Martin was often absent from the Secretary of State's Office in Little Rock.
- **May 30, 2013** — Campbell criticizes Martin for spending more than \$100,000 of state money on outside legal counsel, saying he's the first secretary of state to hire outside lawyers.
- **Aug. 20, 2013** — Campbell outlines problems with the campaign finance reports of Lt. Gov. Mark Darr, then running for the Republican nomination for the 4th Congressional District, highlighting meals and gasoline purchases classified as "fundraisers." It's the first of several posts about Darr's use of campaign money for personal use.
- **Aug. 23, 2013** — Darr acknowledges "some errors" on the reports and files a complaint against himself with the Arkansas Ethics Commission. Campbell also files a complaint against Darr with the Ethics Commission.
- **Aug. 29, 2013** — Darr leaves the race for the GOP nomination for the 4th Congressional District.
- **Sept. 6, 2013** — The Ethics Commission opens an investigation into Darr.
- **Dec. 19, 2013** — The commission fines Darr \$11,000 for, among other things, making personal use of almost \$32,000 in campaign funds, and making personal use of \$3,500 in expenses charged to a state credit card.

- **Dec. 31, 2013** — Gov. Mike Beebe and other high-ranking Arkansas officials, including all five GOP members of the state's congressional delegation, call on Darr to resign. A few days later talk of impeachment circulates among members of the Legislature.
- **Jan. 10, 2014** — Darr says he'll resign effective Feb. 1.
- **March 3, 2014** — Campbell reports that Circuit Court Judge Mike Maggio of Conway, posting under the moniker of *geauxjudge*, commented about a confidential adoption proceeding involving actress Charlize Theron on a Louisiana State University chat board, a violation of judicial ethics. Maggio, a candidate for the Arkansas Court of Appeals, also posted a number of vulgar, racist, sexist and homophobic comments.
- **March 3, 2014** — The state Judicial Discipline & Disability Commission announces that Maggio is under investigation.
- **March 5, 2014** — Maggio, having acknowledged making the posts, withdraws from the Court of Appeals race.
- **March 11, 2014** — The Blue Hog Report notes that Maggio heard an appeal to reduce a \$5.2 million award in a lawsuit involving a nursing home death on July 8, 2013, the same day seven political action committees received donations from the nursing home's owner, Michael Morton. Maggio reduced the award to \$1 million, and those PACs later made donations to his Appeals Court campaign.
- **March 17, 2014** — The JDDC opens a second investigation into Maggio.
- **March 24, 2014** — The Arkansas Supreme Court relieves Maggio of all his cases.
- **May 24, 2014** — The Democrat-Gazette reports that the FBI is investigating Maggio and the PAC donations.
- **Aug. 6, 2014** — The state Judicial Discipline & Disability Commission announces that it and Maggio have agreed to sanctions that bar him from ever serving as a judge again in Arkansas.

- **Sept. 11, 2014** — The state Supreme Court orders Maggio removed from his judicial office immediately.
- **Jan. 9** — Maggio waives his right to be indicted by a grand jury and pleads guilty in U.S. District Court to a felony bribery charge related to Morton's PAC contributions. (Morton has not been charged with any crime.)
- **April 15** — Under a headline reading "About That Doctorate: Dexter Suggs, Plagiarist," Campbell presents the dissertation of interim Little Rock School Superintendent Dexter Suggs side by side with the earlier dissertation of one Georganne Scott. Large portions of Suggs' dissertation repeat word for word Scott's dissertation.
- **April 22** — Suggs resigns but receives a payout of nearly \$250,000.

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# **EXHIBIT 6**

**FILED UNDER SEAL**

# **EXHIBIT 7**

**FILED UNDER SEAL**

# **EXHIBIT 8**

**FILED UNDER SEAL**

# **EXHIBIT 9**

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13 *Attorneys for Plaintiffs and the Proposed Class*

14

15 UNITED STATES DISTRICT COURT  
16 NORTHERN DISTRICT OF CALIFORNIA

17

18 MATTHEW CAMPBELL and MICHAEL  
HURLEY, on behalf of themselves and all  
19 others similarly situated,

20 Plaintiffs,

21 v.

22 FACEBOOK, INC.,

23 Defendant.

24

25

26

27

28

Case No. C 13-05996 PJH (MEJ)

**UPDATED REPORT OF FERNANDO  
TORRES IN SUPPORT OF PLAINTIFFS'  
MOTION FOR CLASS CERTIFICATION**

Judge: Honorable Phyllis J. Hamilton

**HEARING**

Date: March 16, 2016

Time: 9:00 a.m.

Place: Courtroom 3, 3rd Floor  
The Honorable Phyllis J. Hamilton



1 **I. Experience and Qualifications**

2 1. I am a professional economist and have over 30 years' experience in applied and  
3 theoretical economics. In the course of this experience, I have been a consultant, a university  
4 professor, and a business manager. Both my undergraduate and post-graduate degrees are in  
5 economics, the latter with a concentration in econometrics. Econometrics is the application of  
6 mathematics, statistical methods, and computer science to economic data. Since 2004, I have  
7 specialized in the analysis and valuation of intellectual property and intangible assets. Currently I  
8 am a member and Chief Economist of IPmetrics LLC, an intellectual property consulting firm.

9 2. During the past ten years, I have undertaken a plurality of valuation engagements  
10 where I have appraised the value of a variety of intangible assets in several contexts, such as for  
11 licensing and transaction rate setting, for loan collateral analysis, and generally to assist in the  
12 decision making process regarding the economic role of intangible assets, including intellectual  
13 property. I also regularly give presentations and write about valuation techniques as applicable to  
14 intangibles, and have co-designed and taught the course "Valuing Intangible Assets for  
15 Litigation" for the National Association of Valuation Analysts.

16 3. Additionally, I have served as a consultant on numerous cases involving  
17 intellectual property infringement contract issues and contractual disputes. I have prepared over  
18 50 expert reports and have trial, arbitration, and deposition experience as an expert witness on  
19 behalf of both plaintiffs and defendants. I have experience in complex commercial litigation  
20 cases nationally. I currently consult with and have consulted with clients in California, New  
21 York, Texas, Colorado, and Florida.

22 4. In the course of my career, I have observed the evolution of online social networks  
23 and advertising, both as a business owner and as an economist. In the vast majority of intellectual  
24 property infringement cases I have worked on, online advertising and the leverage of information  
25 to support such activity play a central role. I have long studied and analyzed how online  
26 advertising works as well as the nature of the markets that evolve out of, and are supported by,  
27 the internet. Understanding these markets has been enabled not only by my education in  
28 economics, but also been informed by my knowledge of programming acquired first in college as

1 a tool for the analysis of economic phenomena, and later in my professional life having developed  
2 a financial statement analysis and forecasting software system,<sup>1</sup> and an inventory and billing  
3 management system for an acute care hospital.<sup>2</sup>

4 5. In recent years, I have been called upon to testify in cases where the intersection of  
5 social media and advertising has been alleged to have breached rights and principles of privacy,  
6 publicity, trademarks, and patents. In some cases, the issues I have reported on for the courts  
7 were the benefits derived by the social media/advertising platform infringing the rights of  
8 publicity of a class of users,<sup>3</sup> while in others the issue has been the economic value of social  
9 media marketing in sustaining the viability of traditional media properties.<sup>4</sup> Moreover, many  
10 trademark infringement and trade secret cases also tend to involve the analysis and assessment of  
11 online advertising activity.<sup>5</sup>

12 6. I am being compensated for my work in this case at the rate of \$375 per hour.  
13 Attached hereto as Exhibit A is a copy of my most current curriculum vitae setting forth in detail  
14 my qualifications and experience.

15 **II. Introduction, Assignment, and Summary of Conclusions**

16 7. The Plaintiffs' Consolidated Amended Class Action Complaint (the "CAC")<sup>6</sup>  
17 alleges that Facebook utilizes information surreptitiously gathered from purportedly "private"  
18 correspondence sent between Facebook users, and uses that information in a number of ways,  
19 including:

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21 <sup>1</sup> The software system was distributed to the nearly 500 nationalized industrial companies in  
22 Mexico to coordinate budgeting and for which I received a Diploma for Public Service from the  
Federal Government of Mexico in 1988.

23 <sup>2</sup> Developed for a private hospital in 1991 in Ensenada, Baja California, Mexico.

24 <sup>3</sup> In: *Fraley et al. v. Facebook, Inc.*, case 11-1726 before the USDC for the Northern District of  
California.

25 <sup>4</sup> In: *S. Mattocks v. Black Entertainment Television, LLC*, case 13-61582 before the USDC for the  
Southern District of Florida.

26 <sup>5</sup> In, e.g., *Gen. C.E. Yeager v. Aviat Aircraft Inc. and S. Horne*, case 10-CV-2055 before the  
27 USDC for the Eastern District of California; *Laserfiche v. SAP A.G.*, case 10-7843 (USDC for the  
Central District of California); and *Estate of Michael Jackson, et al., v. Howard Mann, et al.*, case  
11-cv-584 (USDC for the Central District of California).

28 <sup>6</sup> Consolidated Amended Class Action Complaint, filed April 25, 2014.

- 1 a. to increment the “Like” counts of third party websites that  
2 installed Facebook’s “Like” button social plug-in until, on  
3 information and belief, at least October 2012;<sup>7</sup>  
4 b. to catalogue information about specific URLs that were shared  
5 and use that information for targeted advertising or other  
6 purposes;<sup>8</sup> and  
7 c. to catalogue information about Facebook users who shared such  
8 URLs and use that information for targeted advertising or other  
9 purposes.<sup>9</sup>

10 8. According to the CAC, the putative Class Period began on December 30, 2011.<sup>10</sup>

11 [REDACTED]

12 [REDACTED] <sup>11</sup>

13 9. I further understand that the Plaintiffs are seeking certification of the following  
14 Class:

15 All natural-person Facebook users located within the United States  
16 who have sent, or received from a Facebook user, private messages  
17 that included URLs in their content [REDACTED]  
18 [REDACTED], from within two years before the  
19 filing of this action up through the date of class certification.

20 10. In this context, I have been asked to analyze the following questions with regard to  
21 the Class defined above:

- 22 a. Is there proof common to the proposed Class capable of  
23 showing that—and how much—Facebook profited or otherwise  
24 benefited from the Electronic Communications Privacy Act  
25 (“ECPA”) and the California Invasion of Privacy Act (“CIPA”)  
26 violations alleged in the CAC?  
27 b. Is there a reliable Class-wide or formulaic method capable of  
28 quantifying the amount of such profits or value of such benefits  
to Facebook and of allocating those profits to the Class?

11. Based upon my work to date, I have reached the following conclusions:<sup>12</sup>

24 <sup>7</sup> *Id.* at §§27, 39.

25 <sup>8</sup> *E.g., Id.* at §86.

26 <sup>9</sup> *E.g., Id.* at §30.

27 <sup>10</sup> *Id.* at §59.

28 <sup>11</sup> *Id.* at §§27, 39.

<sup>12</sup> It is, of course, possible that with additional information, including production from Facebook, and inputs, these conclusions could be refined. The list of documents I have considered in forming my opinions is attached to this report as Exhibit B.

- 1 a. There is evidence common to the Class capable of showing that  
2 Facebook profited or otherwise benefited from the scanning  
3 alleged to violate ECPA and CIPA in the CAC. Specifically, as  
4 explained in the body of this report, I have concluded that the  
5 profits or other unjustly-obtained benefits may be analyzed and  
6 quantified based upon Facebook’s records without reference to  
7 individual proof with respect to any member of the Class, such  
8 Class membership being identifiable and ascertainable based  
9 upon Facebook’s records.
- 10 b. Class-wide evidence capable of showing profits or other  
11 benefits to Facebook falls into two categories (1) evidence  
12 concerning Facebook’s use of information derived from private  
13 messages by creating associations within Facebook’s Social  
14 Graph (described in more detail below); and (2) evidence  
15 concerning Facebook’s profits or other benefits resulting from  
16 its campaign to encourage third-party websites (“Marketers”) to  
17 install the Facebook Like button, of which, as alleged,  
18 Facebook’s unlawful scanning was an integral part.
- 19 c. Standard economic methods are capable of reliably quantifying  
20 the aggregate amount of profits to Facebook, and the aggregate  
21 value of other benefits to Facebook that resulted from scanning  
22 and subsequent uses or potential uses of the information derived  
23 therefrom.
- 24 d. The damages calculated are based on the economic benefits the  
25 Defendant received from the information intercepted from the  
26 private messages sent by the Class members. Facebook benefits  
27 from advertising revenue from adding the intercepted user-URL  
28 links into their targeting platform and from enhancing their  
understanding of how and what users share links to. The  
benefit is defined not only by the potential act of generating  
additional revenue from targeting ads to the senders of  
intercepted messages, but also by the additional use in better  
targeting these and similar users (in marketing terms); and the  
benefit is ultimately proportional to the number of URLs  
intercepted from private messages.

### 21 **III. Case Background**

#### 22 **A. Facebook, Inc.**

23 12. Facebook operates the world’s largest social marketing and information platform.

24 The social network side of the business has over 1.5 billion users around the world.<sup>13</sup> On August

25 <sup>13</sup> Measured as monthly active users (“MAUs”), which Facebook defines as “a registered  
26 Facebook user who logged in and visited Facebook through our website or a mobile device, used  
27 our Messenger app, or took an action to share content or activity with his or her Facebook friends  
28 or connections via a third-party website or application that is integrated with Facebook, in the last  
30 days as of the date of measurement” (Facebook, 2014 10-K Page 35). Current MAUs from:  
Facebook, Inc.’s 2015 Q3 Earnings Report (November 4, 2015) Slide 5. At  
<http://investor.fb.com/results.cfm>.

1 24, 2015, 1 in 7 people on Earth used Facebook,<sup>14</sup> which is equivalent to approximately 51% of  
2 all internet users worldwide.<sup>15</sup> In the U.S. and Canada, there are currently 217 million (monthly  
3 active) users<sup>16</sup> which represent 61% of 357 million people in the region.<sup>17</sup> Facebook’s advertising  
4 network generates revenue in excess of \$1.4 billion monthly,<sup>18</sup> 49.3% of which is attributable to  
5 users in the U.S. and Canada.<sup>19</sup> Furthermore, Facebook’s most recent disclosure states that, in the  
6 U.S. and Canada, Facebook users performed advertising revenue-generating activities at a rate of  
7 \$9.86 per quarter per user.<sup>20</sup>

8 13. Facebook’s online social networking service allows users to communicate through  
9 the sharing of text, photograph, video, and internet content. In addition, these activities are  
10 supported by a variety of Facebook applications on mobile devices, including Facebook  
11 Messenger, Instagram and WhatsApp.<sup>21</sup> While Facebook positions its business as focused on  
12 “creating value for people, [M]arketers, and developers,” it generates the bulk of its revenues  
13 from the latter two categories and then principally to the degree they want to reach the former.

14 14. Facebook represents a significant opportunity for Marketers due to the  
15 combination of the size of the user base and the abundance of rich user data.<sup>22</sup> Thus, access to the  
16 wealth of information captured on Facebook enables advertisers to reach people across devices

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17 <sup>14</sup> Facebook CEO Mark Zuckerberg’s public post on Facebook.com of August 27, 2015, at:  
18 (<https://www.facebook.com/zuck/posts/10102329188394581>).

19 <sup>15</sup> Based on the current estimate of worldwide internet users of 2.919 billion people (14.04 million  
20 in the USA) according to the Wolfram|Alpha Knowledgebase, using data from the World Bank  
(<http://www.wolframalpha.com/> accessed 10/26/15).

21 <sup>16</sup> Facebook, Inc.’s 2015 Q3 Earnings Report, Slide 5 (*op cit.*).

22 <sup>17</sup> According to U.S. Census projections (321.37 million people in the USA in July 2015) and  
23 Statistics Canada estimates (35.85 million people in Canada in July 2015) [In:  
<http://www.census.gov/population/projections/data/national/2014/summarytables.html>, and  
<http://www.statcan.gc.ca/pub/91-002-x/2015002/t002-eng.pdf>].

24 <sup>18</sup> Facebook, Inc.’s 2015 Q3 Earnings Report, Slide 8 (*op cit.*), quarterly data divided by three.

25 <sup>19</sup> Facebook, Inc.’s 2015 Q2 Earnings Report, Slide 10 (*op cit.*).

26 <sup>20</sup> This is the ratio of quarterly revenue to monthly active users per Facebook, Inc.’s 2015 Q3  
27 Earnings Report, Slide 12 (*op cit.*).

28 <sup>21</sup> Facebook, 2014 10-K Page 5 (User and Revenue data cited above do not include Instagram or  
WhatsApp users).

<sup>22</sup> As expressed by Facebook’s Adam Isserlis, Manager, Corporate Communications,  
Ads/Monetization; Colleen Coulter, Product Marketing Communications Manager, in “IAB  
Social Media Buyers Guide” available on the Interactive Advertising Bureau website  
(<http://www.iab.net/socialmediabuyersguide>).

1 and, importantly, to effectively measure the impact of their advertising. In its public disclosures,  
2 Facebook emphasizes that the platform creates value for Marketers by its unique combination of:

- 3 a. *Reach*, with over a billion and a half monthly active users in  
4 2015;<sup>23</sup>
- 5 b. *Relevance*, supporting ad targeting by rich demographics and  
6 interests data plus Marketers' and third party data cross  
7 referencing;<sup>24</sup>
- 8 c. *Social Context*, by providing information to leverage  
9 recommendations from friends;<sup>25</sup> and,
- 10 d. *Engagement*, with ad products prompting interaction and  
11 sharing.<sup>26</sup>

12 15. In this report, I will refer to advertisers that use Facebook's website and the  
13 corresponding development tools to leverage the targeted access to the massive user base as  
14 'Facebook Marketers' or simply 'Marketers.'

15 16. Facebook also represents an important platform for software developers by  
16 providing access to a substantial user base, a payment management mechanism, and analytical  
17 information about the use of applications.<sup>27</sup>

18 17. Facebook has built a dominant position in the social networking market and, as  
19 such, attracts a significant amount of consumers' time and attention. According to the Business  
20 Intelligence Report on Social Engagement, in 2013 Americans spent an average of 37 minutes  
21 daily on social media, a higher time-spend than any other major internet activity, including  
22 email.<sup>28</sup> More recently, Facebook claims that "when it comes to time spent by users of the  
23 platform, across Facebook, Messenger and Instagram, people are now spending more than 46  
24 minutes per day on average."<sup>29</sup> This amount of attention is leveraged by Facebook in providing

25 <sup>23</sup> Facebook, Inc.'s 2015 Q3 Earnings Report, Slide 5 (*op cit.*). and Facebook, Inc. Form 10K  
26 2012, p. 7.

27 <sup>24</sup> Facebook, Inc. Form 10K 2012, p. 7.

28 <sup>25</sup> *Id.*, p. 8.

<sup>26</sup> *Id.*

<sup>27</sup> Facebook for Developers website: <https://developers.facebook.com/>.

<sup>28</sup> Business Insider, Business Intelligence Report on Social Engagement  
(<http://www.businessinsider.com/social-media-engagement-statistics-2013-12>).

<sup>29</sup> Mark Zuckerberg's remarks during the Second Quarter, 2015 Earnings Call (page 1 of the

*Footnote continued on next page*

1 Marketers access to a relevant and sizable audience, and now constitutes the company's  
2 overwhelming source of revenue; currently, advertising accounts for 95.5% of Facebook's  
3 revenue.<sup>30</sup>

4 18. From an economic perspective, Facebook is thus a platform business and operates  
5 a two-sided market. That is, much like broadcast television and terrestrial radio in the past,<sup>31</sup>  
6 Facebook essentially sells to Marketers access to "the thoughts and emotions" of an audience  
7 aggregated on the basis of providing online social media products and user-generated content to  
8 "users," rather than simply the transmission of content. In sharp contrast to broadcast media, with  
9 Facebook the access is readily measurable and the advertising messages finely targeted and  
10 distributed. Thus, essentially, on one side of the market Facebook accrues users providing online  
11 products,<sup>32</sup> and on the other it sells advertising placements to Marketers. Furthermore, on the  
12 user acquisition side, Facebook competes with other social media offerings, such as Twitter and  
13 Google+, and with other online activities (including news and video reading/watching). Further,  
14 Facebook is developing the platform as a portal through which users can access news,<sup>33</sup> discover  
15 content by searching,<sup>34</sup> and incorporate more and more online activities.<sup>35</sup> On the advertising  
16 sales side, Facebook competes with both online advertising outlets, such as Google AdWords and  
17 DoubleClick,<sup>36</sup> and off-line advertising media (including traditional broadcast TV and print  
18 advertising). Facebook's competitive advantage stems from the power of leveraging the deep

19 *Footnote continued from previous page*  
20 transcript) held on July 29, 2015. Available at: <http://investor.fb.com/results.cfm>.

21 <sup>30</sup> Facebook, Inc.'s 2015 Q3 Earnings Report, Slide 8 (*op cit.*).

22 <sup>31</sup> *See, inter alia*, Ch. 7-Broadcasting in: H. Vogel, Entertainment Industry Economics,  
23 Cambridge University Press, 8<sup>th</sup> Ed., 2011.

24 <sup>32</sup> As a company, these products now include Instagram and WhatsApp, expanding the original  
25 Facebook and then Messenger products. Facebook, 2014 10-K, p. 5.

26 <sup>33</sup> For example, with the introduction of the "Instant Articles" initiative and new deals with  
27 publishers like the Washington Post (<http://media.fb.com/2015/05/12/instantarticles/>).

28 <sup>34</sup> *E.g.*, with expanding the power of Facebook search  
(<http://newsroom.fb.com/news/2015/10/search-fyi-find-what-the-world-is-saying-with-facebook-search/>).

<sup>35</sup> Such as video, with video hosting and action tracking  
(<http://newsroom.fb.com/news/2015/06/news-feed-fyi-taking-into-account-more-actions-on-videos/>), app acquisitions like Instagram and WhatsApp, and with plugins to track activities  
outside of Facebook.

<sup>36</sup> *See* Google Products and Advertising Platforms ([www.thinkwithgoogle.com/products/](http://www.thinkwithgoogle.com/products/)).

1 targeting knowledge available from its unique access to an increasingly complete and  
2 computerized social network, including by tracking users beyond the Facebook.com website.  
3 Consequently, the two activities, providing online social networking services and selling  
4 advertising, are inextricably connected; the profit motive permeates both sides of the operation.

5 19. Facebook competes for advertising expenditures, among other means, by  
6 differentiating its platform from competitors' as the most effective because of the unique ability  
7 to leverage the Social Graph, described in more detail below. Researchers in the field of social  
8 and economic networks have noted specifically that they "...find evidence that social advertising  
9 is effective, and that this efficacy seems to stem mainly from the ability of targeting based on  
10 social networks to uncover similarly responsive consumers."<sup>37</sup> In practice, the superior  
11 effectiveness of advertising on this basis is demonstrated by the increasing click-through rates  
12 ("CTR") of ads placed through Facebook as opposed to ads placed through Google's display  
13 network.<sup>38</sup>

14 **B. The Social Graph**

15 20. The main way in which individual Facebook users knowingly connect with each  
16 other is by selecting the "Friend" button to add them to their network. The main way users  
17 knowingly interact with brands that have Facebook pages is to select the "Like" button so a  
18 "fan"<sup>39</sup> link is created allowing the Facebook page's posts to appear on each fan's home page (on  
19 the "news stream" of posts from friends and liked pages). Facebook also creates connections that  
20 users may not be aware of. For example, beyond the Facebook.com website or applications, users'  
21 browsing and other activities are also able to be logged using cookies,<sup>40</sup> pixels<sup>41</sup> and similar

22 <sup>37</sup> C. Tucker, "Social Advertising," February 15, 2012, SSRN (<http://ssrn.com/abstract=1975897>).

23 <sup>38</sup> Since mid-2014 Facebook CTRs have increased by 35% vis-à-vis a 25% increase on Google's  
24 network, according to the latest "Digital Advertising Report Q3 2015", Adobe Digital Index  
([www.cmo.com/adobe-digital-index.html](http://www.cmo.com/adobe-digital-index.html)), p.18.

25 <sup>39</sup> In Facebook marketing, while it is natural to speak of a "Friend" of a person, the equivalent for  
26 brands is to use "Fan" instead, although they may also be used interchangeably.

27 <sup>40</sup> Cookies are small files that are stored on the user's device by the website or application being  
28 used and some ads being viewed.

<sup>41</sup> Pixel tags in this context are also called clear GIFs, web beacons, or pixels and are small blocks  
of code on a webpage or application that allow them to perform actions such as read and place  
cookies and transmit information to Facebook or its partners.

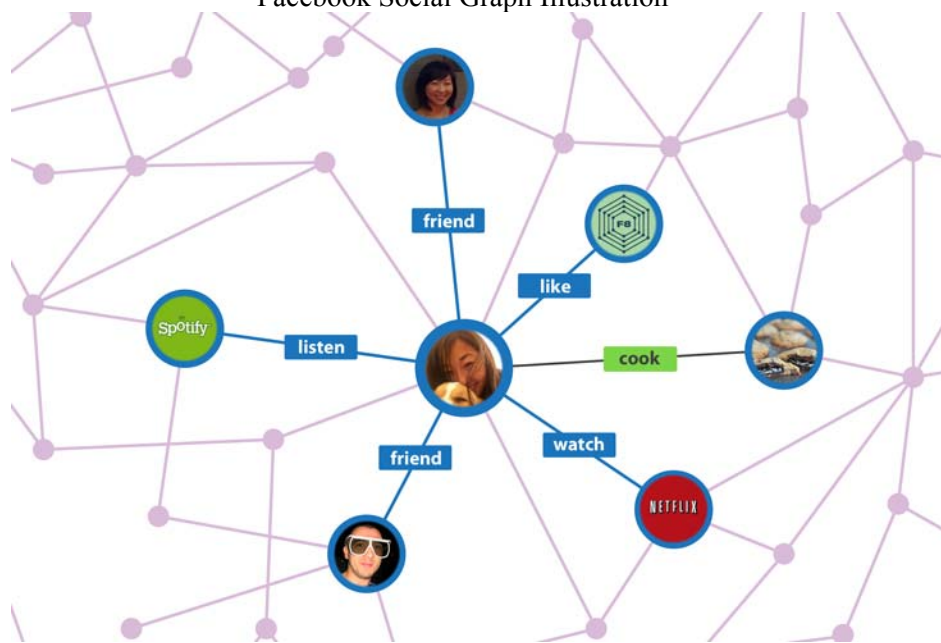


1 internet technologies.<sup>42</sup> The resulting information is used in delivering targeted advertising and  
2 refining the information represented on the Social Graph.

3 21. Facebook's Social Graph represents the integration of information collected by  
4 Facebook about Facebook users, and encompasses their location, demographics, interests,  
5 behaviors, and connections, in order to target advertising and marketing communications to  
6 specific groups of users identified by these attributes.<sup>43</sup>

7 22. Figure 1 illustrates one hypothetical user on the social network (at the center),  
8 technically referred to as a "node." This user is connected to two friends by lines called "edges,"  
9 has "Liked" a page (For the F8 Developers Conference, illustrated by its logo on the upper right  
10 corner), is interested in cooking (link labeled "cook"), has watched a video on Netflix (bottom  
11 right link), and has listened to music on Spotify (middle left link).

12  
13 **Figure 1**  
14 Facebook Social Graph Illustration<sup>44</sup>



25 <sup>42</sup> See also <https://www.facebook.com/help/cookies/>.

26 <sup>43</sup> Although the term is borrowed from Mathematics and Sociology, it was introduced in the  
27 Facebook context by Mark Zuckerberg during the 2007 F8 Developers Conference on May 24,  
28 2007.

<sup>44</sup> From Business Insider  
(<http://static3.businessinsider.com/image/4f5112e169bedd1526000061/facebook-open-graph.jpg>).

1           23.     Figure 1 is a partial visual representation of the Social Graph. In practice, the  
2 information contained in the Social Graph is stored in a (complex and distributed) database. The  
3 data model Facebook utilizes is called TAO (The Objects and Associations).<sup>45</sup> The constituent  
4 parts of this model – illustrated above – are Objects (representing the “nodes,” or data items, such  
5 as a user or a location) and Associations (representing the “edges,” or relationships between  
6 Objects).

7           24.     Thus, as illustrated, even activities (accessing pages, clicking on Like or Share  
8 buttons) performed on websites or applications outside of Facebook can, and are, represented in  
9 the Social Graph. Granting controlled access and writing abilities to this wealth of information to  
10 registered developers, on April 21, 2010, Facebook released the Open Graph Protocol,<sup>46</sup> which  
11 enables any web page to become a rich object in a Social Graph, and the Graph API,<sup>47</sup> which is  
12 the primary way for apps to read and write to the Facebook Social Graph.<sup>48</sup> Facebook builds and  
13 maintains full access to the full Social Graph leveraging its own record of users’ connections  
14 behind-the-scenes.

15           **C.     The Like Button**

16           25.     Facebook social plugins, such as the “Like” Button, are lines of code that third-  
17 party websites can integrate into their sites, which display a Facebook logo and execute the  
18 programmed code when the page is accessed and/or a Facebook user clicks on it.<sup>49</sup> Facebook first  
19 implemented the Like Button in or around February 2009<sup>50</sup> and, in Facebook’s F8 conference in  
20

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21 <sup>45</sup> See <https://www.facebook.com/notes/facebook-engineering/tao-the-power-of-the-graph/10151525983993920>

22 <sup>46</sup> The Open Graph protocol is programming code used on Facebook to allow any web page to  
23 have the same functionality as any other object on Facebook. See Open Graph Protocol open  
24 source website (<http://ogp.me/>).

24 <sup>47</sup> API, or “Application Programming Interface,” is the code that a third party may utilize to build  
25 software on top of Facebook’s platform. Through Facebook’s API, the third party product is able  
26 to utilize parts of Facebook’s code (and access certain tranches of Facebook’s data) for its  
27 functionality.

26 <sup>48</sup> See <https://developers.facebook.com/docs/graph-api>.

27 <sup>49</sup> Facebook SDK Documentation  
(<https://developers.facebook.com/docs/javascript/quickstart/v2.5#plugins>).

28 <sup>50</sup> J. Kincaid in: TechCrunch (<http://techcrunch.com/2009/02/09/facebook-activates-like-button-friendfeed-tires-of-sincere-flattery/>).

1 2010, it was opened up for third party developers for marketing and application development  
2 uses.<sup>51</sup>

3 26. As illustrated in Figure 1 above, a Like becomes a Social Graph connection  
4 between a user and a Marketer that has installed a Facebook Social plug-in.<sup>52</sup> Generally speaking,  
5 “Liking” a “Page” means the user is connecting to that Page, and “Liking” in reference to a post  
6 from a friend, which means the user is letting that friend (or friend of a friend) know that the user  
7 “likes” his or her post (without leaving an explicit comment).<sup>53</sup> The first is a link between a user  
8 and a Marketer, the second is a link among users. The “Likes” recorded as a result of scanning  
9 private messages addressed in this case are of the first type.

10 27. Facebook developed social plug-ins, such as the “Like” button to continue  
11 expanding its network by affiliating with Marketers or third party websites. Social plug-ins  
12 enable advertisers and Marketers to integrate user activity inside and outside of the Facebook  
13 website. The initial performance metric for these advertising activities was the number of  
14 “Likes” associated with a company within Facebook and, increasingly, outside of Facebook on  
15 Marketers’ websites.

16 28. Figure 2 below is an illustration from Facebook materials addressed to Marketers  
17 on the benefits of using social plugins.

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26  
27 <sup>51</sup> Facebook F8 April 21, 2010.

28 <sup>52</sup> Facebook, Social Plugins FAQs, at: <https://developers.facebook.com/docs/plugins/faqs/#ref>.

<sup>53</sup> See Facebook Help Center at: <https://www.facebook.com/help/228578620490361>.

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29. Facebook is well aware of the power of the Like button to generate actionable signals for advertisers.<sup>54</sup> From its launch in April 2010, [REDACTED]  
[REDACTED]<sup>55</sup>

30. Facebook has promoted this social plug-in aggressively to third-party websites by, for instance, taking control of News Feed content.<sup>56</sup> In turn, Marketers that wished to maintain their reach via the social network had to respond by increasing the integration of Facebook into their marketing strategies and budgets.<sup>57</sup>

**D. The Alleged Violations**

31. Facebook published a privacy policy and posted descriptions of Facebook’s private messaging service claiming it would provide a way to communicate privately and that the messages would be private.<sup>58</sup>

<sup>54</sup> According to internal communications produced in discovery, for example, Facebook personnel sought [REDACTED] (FB000011746).

<sup>55</sup> According to Defendant’s internal communications [REDACTED] (FB000011715-6).

<sup>56</sup> See Facebook Media, “An Update to News Feed: What it Means for Businesses” (<https://www.facebook.com/business/news/update-to-facebook-news-feed>) and “News Feed FYI: Balancing Content from Friends and Pages” (<http://media.fb.com/2015/04/21/news-feed-fyi-balancing-content-from-friends-and-pages/>).

<sup>57</sup> See, e.g., MarketingLand (<http://marketingland.com/facebooks-latest-tweaks-favor-friends-could-hurt-page-reach-125931>).

<sup>58</sup> CAC, at §§21-24.

1           32.     The CAC alleges that Facebook actually scanned the content of private messages  
2 and used information concerning any URLs contained within the messages to artificially increase  
3 the appearance of user engagement with third-party websites by increasing the count on such  
4 sites' Like buttons, as well as for other, undisclosed, purposes.<sup>59</sup>

5           33.     Additionally, [REDACTED]  
6 [REDACTED]  
7 [REDACTED]  
8 [REDACTED]<sup>60</sup>

9           34.     Consequently, in the context addressed in the background section, the following  
10 methodological discussion addresses two distinct aspects of how Facebook benefited from the  
11 accused actions:

- 12           a.     Benefits from the additional information that enhances the  
13                 Social Graph as a means to increase advertising revenue and  
14                 profits; and,
- 15           b.     Benefits from artificially increasing the "Like Count" on third  
16                 party websites using Facebook social plugins,<sup>61</sup> because it  
17                 enhances clients' impression of how effective Facebook  
18                 Marketing is and incentivizes Marketers' willingness to invest  
19                 in Facebook Marketing.

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25           <sup>59</sup> URL stands for Uniform Resource Locator, the unique identifier of each document on the  
26 internet. Defined initially by Tim Berners-Lee in: "Uniform Resource Locators (URL): A Syntax  
27 for the Expression of Access Information of Objects on the Network" (March 1994) in:  
<http://www.w3.org/Addressing/URL/url-spec.txt>.

28           <sup>60</sup> CAC at §§25-26.

<sup>61</sup> At least up to the end of 2012.

1 **IV. The Measure of Damages**

2 **A. Benefits Resulting from Enhancing the Social Graph by Incorporating**  
3 **Intercepted Data.**

4 35. As discussed below, the incremental value of Facebook’s benefits from enhancing  
5 the Social Graph by including data intercepted in private messages can be calculated on a per  
6 URL link basis. This incremental profit from Facebook’s accused behavior can be calculated by  
7 utilizing the corresponding inputs and the algorithm discussed in this section.

8 36. It is not disputed that Facebook’s Social Graph is a valuable asset. The value  
9 fundamentally arises from the aggregation of the collected information from all users in general,  
10 as well as from the information intercepted from the Class members’ private messages. By its  
11 actions, Facebook has denied Class members the ability to restrict access to elements of  
12 information about them (URL links) and is profitably utilizing the information by enhancing the  
13 value of its own social media advertising platform, which helps Facebook maintain and grow its  
14 market share in the face of competition. Thus, by gathering data from Class members as alleged  
15 by Plaintiffs, Facebook directly benefits by enhancing the informational content and targeting  
16 power of their key revenue-generating asset: the Social Graph.

17 37. The more nuanced the data and the inferences that can be drawn from it, the more  
18 effective Facebook marketing becomes and the greater the share of advertising revenue that the  
19 Company can extract. For example, in a recent Earnings Call Facebook’s Chief Operating  
20 Officer, Sheryl Sandberg, highlighted an advertising campaign on Facebook in which the fast  
21 food chain Wendy’s wanted to reach a very specific target group for the launch of a new product  
22 (“Jalapeño Fresco Spicy Chicken”): “millennials that are spicy food lovers”. Wendy’s worked  
23 with Facebook to create a campaign with five video ads specifically targeted at Facebook users  
24 that fit that socio-demographic (millennials) and affinities (spicy food lovers) profile. The  
25 targeting of the campaign, based on the information in the Social Graph, was successful in  
26 exceeding goals in terms of: (a) the impact of the ads, as significantly more consumers recalled  
27 seeing the ads; and (b) in terms of sales, with a significant increase in purchases among the target  
28

1 segment.<sup>62</sup> The more precise the socio-demographic and affinities profile, the more successful  
2 and, therefore, profitable, an advertising campaign can be. The value of the Social Graph asset is  
3 significant. Working off of publicly-available information, this value can be ascertained as  
4 follows, applying the generally recognized Income Approach to Valuation.<sup>63</sup>

5 38. Under the Income Approach, the value of an asset is measured by the net present  
6 value of the net economic benefit to be received over its economically useful life.<sup>64</sup> The three  
7 essential factors of this measurement of value are: (1) the value of the net income stream  
8 (revenue minus expenses) that can be generated by the asset; (2) an assumption as to the duration  
9 of the net income stream; and (3) an assumption as to the risk associated with the realization of  
10 the anticipated net income.<sup>65</sup> These factors can be determined mainly based on Facebook's  
11 financials.

12 39. Focusing on the Social Graph delimited as far as possible to the U.S., Facebook  
13 has stated that, as of June 30, 2015, advertising revenue from the U.S. is in the order of \$1,459  
14 million per quarter increasing to \$1,630, as of September 30, 2015.<sup>66</sup> This is revenue attributable  
15 to the Social Graph because it enables the unique selling proposition of targeted advertising on  
16 Facebook. Furthermore, according to Facebook, the average cost of revenue, marketing and  
17 sales, and general and administrative expenses during the same periods was 40.75%, rising to  
18 41.25%, as a percentage of revenue.<sup>67</sup> Thus, a profit of \$3,459 to \$3,830 million per year is  
19 attributable to the U.S. portion of the Social Graph asset.<sup>68</sup>

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20 <sup>62</sup> Example discussed by Sheryl Sandberg (Facebook COO) during the 2015 Q2 earnings call held  
21 on July 29, 2015. Available at: <http://investor.fb.com/results.cfm>.

22 <sup>63</sup> See, *inter alia*, G.V. Smith and R.L. Parr, *Valuation of Intellectual Property and Intangible*  
*Assets*, John Wiley & Sons, 2000; R. F. Reilly and R.P. Schweihs, *Valuing Intangible Assets*,  
McGraw Hill, 1999.

23 <sup>64</sup> See, e.g.: Smith and Parr (2000), p. 164.

24 <sup>65</sup> *Ibid*, p. 169.

25 <sup>66</sup> This is the average of the quarterly advertising revenue from the activities of users located in  
26 the U.S. and Canada during the four quarters ending June 2015 (\$1,622 million) and September  
27 2015 (\$1,812) as disclosed in: Facebook, Inc.'s 2015 Earnings Reports (July 29, 2015, November  
4, 2015) Slide 10 (*op cit.*). A further adjustment is made to exclude data for Canada, multiplying  
by the ratio of the size of the U.S. Population to the total of the two countries (89.96% = 321.37 /  
(321.37+35.85) per official U.S. Census and Statistics Canada sources (*op. cit.*).

28 <sup>67</sup> Facebook, Inc.'s 2015 Earnings Reports (July 29, 2015, November 4, 2015) Slide 13 (*op cit.*).  
Per accepted valuation standards, Research and Development expenses are not includable in this

*Footnote continued on next page*

1           40.     The economically useful life of the asset in question, that is, the usefulness of the  
2 information represented in the Social Graph, is not immutable; people’s locations, friends,  
3 affinities, and interests change over time. While the Social Graph contains a varied spectrum of  
4 information, as a proxy for the likely obsolescence of the information embodied in the Social  
5 Graph, the most significant indicator, in my opinion, is geographical mobility. One of the  
6 primary selection criteria in defining a target market is location; there is generally no point in  
7 advertising to users in locations where sales cannot be made, while other primary attributes tend  
8 not to change as often.<sup>69</sup>

9           41.     Geographical mobility is periodically measured by the U.S. Census. On average,  
10 in the span of five years, 35.4% of the population moves.<sup>70</sup> This represents an exponential  
11 decline in the accuracy of address information of 8.37% per year.<sup>71</sup> At this rate, 50% of people  
12 will have moved in about eight years.<sup>72</sup> In addition, considering the broader context of the  
13 valuation of comparable intangible assets for financial reporting, a marketing asset frequently  
14 identified in business mergers and acquisitions is the Customer List. The median remaining  
15 economic life of Customer Lists among publicly traded U.S. companies is also eight years.<sup>73</sup>  
16 Thus, while it is likely that a lot of the information on the Social Graph will still be current after  
17 eight years, a primary attribute and targeting selector (location) will not be accurate for the  
18  
19

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20 *Footnote continued from previous page*

21 valuation because, by definition, their effects are in the future, not as of the valuation date (June  
22 30, 2015).

23 <sup>68</sup> The result of multiplying the quarterly revenue times four quarters and deducting 40.75% for  
24 expenses.

25 <sup>69</sup> These would be parameters such as age, gender, household income, which change predictably,  
26 slowly, sporadically, or not at all.

27 <sup>70</sup> U.S. Census Bureau, Geographical Mobility: 2005 to 2010 (December 2012), Table 2, Page 5  
28 (<http://www.census.gov/prod/2012pubs/p20-567.pdf>).

<sup>71</sup> This equivalent annual rate is calculated algebraically solving the equation expressing the  
Census fact that the ratio of the population in year 5 relative to the population in year 0 is 64.6%  
(100% - 35.4%) and this is equal to  $(1 + \text{annual rate})^5$ .

<sup>72</sup> Technically, in 7.9 years, calculating:  $\log(0.50) / \log(1-0.0837)$ .

<sup>73</sup> Data from: Business Valuation Resources, “Benchmarking Identifiable Intangibles and Their  
Useful Lives in Business Combinations” BVR 2012, p. 66 ([www.bvresources.com](http://www.bvresources.com)).



1 majority of people. Based on these considerations, I have concluded that a reasonably reliable  
2 remaining useful life for valuing the Social Graph asset is eight years.<sup>74</sup>

3 42. A reasonable estimate of the corresponding market discount rate for this asset can  
4 be based on the most current assessment of the risk factors recommended by the most reputable  
5 industry sources.<sup>75</sup> The discount rate is made up of a series of components reflecting the time-  
6 value of money (the so-called Risk Free rate<sup>76</sup>), the general additional risk of equity returns  
7 (known as the Equity Risk Premium<sup>77</sup>), the additional variations of net income in the relevant  
8 industry (the Industry Risk Premium), and the incremental risks unique to the asset class. Thus I  
9 considered the risk-free rate of 4.0%,<sup>78</sup> a market equity risk premium of 5.0%,<sup>79</sup> as well as an  
10 advertising industry risk premium of 3.66% based on generally accepted data sources.<sup>80</sup> In  
11 addition, I considered a risk premium reflecting the incremental risks associated with intangible  
12 assets relative to financial and tangible business assets of 6.0%.<sup>81</sup> Adding together these various  
13 components, I thus arrived at the discount rate for the Social Graph asset of 18.66%.<sup>82</sup>

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15 <sup>74</sup> This is a conservative position since, in reality, Facebook users tend to maintain their  
16 information current as part of the normal use of the network. The asset is being valued “as is” in  
17 mid-2015, without considering continued updating.

18 <sup>75</sup> Duff & Phelps, 2015 Valuation Handbook: Guide to the Cost of Capital, John Wiley & Sons,  
19 2015

20 <sup>76</sup> In valuation theory, this rate is the return available on a security that the market generally  
21 regards as free of the risk of default. In practice, in the U.S., this is the yield on government  
22 securities, adjusted (or *normalized*) to remove the distortion of the artificially depressed,  
23 unsustainable rates during the 2008 financial crisis. [Duff & Phelps (2015), Ch. 3].

24 <sup>77</sup> Conceptually, this premium is defined as the extra return, over the expected yield of risk-free  
25 securities, which investors expect to receive from an investment in the market portfolio of  
26 common stocks (Duff & Phelps 2015, pp. 3-17).

27 <sup>78</sup> Technically, this rate is the normalized 20-year U.S. Treasury yield [Duff & Phelps (2015),  
28 Ch. 3].

<sup>79</sup> This is the considered *forward* equity risk premium recommended by Duff & Phelps.

<sup>80</sup> See, Duff & Phelps (2015), pp 3-35 and 5-21 (The industry risk premium corresponds to a Beta  
of 1.73). In addition, some valuation models consider a specific “Size Premium” which, in this  
case, is not necessary since the Facebook Social Graph is evidently the largest marketing database  
in the economy.

<sup>81</sup> As recommended by IPmetrics for intellectual property (IP) valuation analyses based on market  
interest rate spreads for IP-backed securities (*See, e.g.*, M. Loumioti, “The use of intangible assets  
as loan collateral” Harvard Business School, 2011 Available at the Social Science Research  
Network: <http://ssrn.com/abstract=1748675>).

<sup>82</sup> This is the result of adding the risk-free rate and the three identified risk premiums  
corresponding to equity, industry, and asset considerations ( $18.66 = 4 + 5 + 3.66 + 6$ ).

43. Consequently, applying the aforementioned method and inputs, which are the type of methods and parameters applied by valuation professionals like myself, the (U.S.) Social Graph asset relating to the U.S. is valued at approximately \$14.5 billion, as illustrated by the results in the following tables:

Table 1  
U.S. Social Graph Valuation  
(As of 2015 Q2)

Year	Annual Profit (\$ millions)	Discount Factor (at 18.66%)	Discounted Value (\$ millions)
1	\$ 3,459	0.84274	\$ 2,915
2	3,459	0.71022	2,457
3	3,459	0.59853	2,070
4	3,459	0.50441	1,745
5	3,459	0.42509	1,470
6	3,459	0.35824	1,239
7	3,459	0.30190	1,044
8	3,459	0.25443	880
<b>Total Value:</b>			<b>\$13,820</b>

Table 1.A  
U.S. Social Graph Valuation  
(As of 2015 Q3)

Year	Annual Profit (\$ millions)	Discount Factor (at 18.66%)	Discounted Value (\$ millions)
1	\$ 3,830	0.84274	\$ 3,228
2	3,830	0.71022	2,720
3	3,830	0.59853	2,293
4	3,830	0.50441	1,932
5	3,830	0.42509	1,628
6	3,830	0.35824	1,372
7	3,830	0.30190	1,156
8	3,830	0.25443	975
<b>Total Value:</b>			<b>\$15,304</b>

44. Since Facebook already has the infrastructure and software development platform in place to develop and grow the Social Graph, as well as access to the marketing clients that fund

1 the advertising campaigns, the additional information collected through the accused activities has  
2 arguably zero incremental cost. Therefore, from an economic perspective, virtually all of the  
3 incremental advertising revenue generated from the enhancement can justifiably be considered  
4 incremental profit to Facebook. Therefore, the impact of additional information intercepted from  
5 private messages on Facebook's revenue flows directly to the bottom line (profits).

6 45. With the relevant quantitative information, I would estimate the value of the  
7 enhancement to the Social Graph as commensurate with the ratio of (1) intercepted URLs in  
8 private messages during the Class period to (2) the total number of links on the Social Graph.

9 46. Absent specific Facebook network data,<sup>83</sup> from public information it can be  
10 ascertained that during 2010, Facebook had an average of 127.1 million monthly active users in  
11 the U.S.<sup>84</sup> On average, within Facebook as a whole, the average monthly active user sent nearly  
12 43 messages per month.<sup>85</sup> Thus, in 2010, I estimate that the U.S. user base sent approximately  
13 65.4 billion messages.<sup>86</sup> The following Table shows the results of these estimates on an annual  
14 basis.

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22 <sup>83</sup> [REDACTED]

23 [REDACTED]

24 <sup>84</sup> According to Facebook Inc.'s Form 10-K Disclosures, The four quarters of 2010 in the U.S. &  
25 Canada had MAUs of 130,137,144, and 154 million respectively. The average cited is adjusted to  
26 exclude users in Canada.

27 <sup>85</sup> Considering Facebook's disclosure in connection with the redesign of the Messenger platform,  
28 stating that 350 million MAUs sent 15 billion messages per month, or an average of 42.857  
messages per MAU/month, at: <https://www.facebook.com/notes/facebook-engineering/the-underlying-technology-of-messages/454991608919>.

<sup>86</sup> This is the result of multiplying 42.857 messages/user/month times the 127.07 million users,  
times 12 months.

Table 2  
U.S. Messaging Activity  
(2010 – 2015)

Year	Monthly Average Users (millions)	Estimated Messages (millions)
2010	127	65,353
2011	155	79,464
2012	169	86,867
2013	178	91,725
2014	184	94,848
2015H1	190	97,855

47. Since user engagement has increased over the Class Period,<sup>87</sup> the estimates on Table 2 may well understate the amount of messaging activity on the network.

48. The relative impact of this additional, but allegedly wrongfully obtained information, on the value of the Social Graph can in principle be ascertained as the addition of information to the Social Graph. In the absence of detailed information about it, I have relied on public information to approximate the optimal analysis.

49. Facebook researchers have published results of the formal characterization of the entire social network of active members<sup>88</sup> of Facebook in May 2011, comprising 721 million active users.<sup>89</sup> From this universe, 149 million are U.S. Facebook users.<sup>90</sup> Among these U.S. social network users, there were 15.9 billion friendship links or graph “edges,” and the average U.S. user had around 214 Facebook friends.<sup>91</sup> The graph is highly connected, in the sense that

<sup>87</sup> According to Facebook, between August 2012 and May 2013 user engagement, as illustrated in the number of likes generated per day, increased from 2.7 Billion to 4.5 billion on average (<https://www.facebook.com/photo.php?fbid=10151908376831729&set=a.10151908376636729.1073741825.20531316728&type=1&theater>).

<sup>88</sup> Defined for analysis as “the number of members that logged into the site in the 28 days before the May 2011 date of the study and had, at least, one Facebook friend.” *See, e.g.*: J. Ugander, B. Karrer, L. Backstrom, C. Marlow, “The Anatomy of the Facebook Social Graph”, White Paper, 18 Nov. 2011, Cornell University (<http://arxiv.org/abs/1111.4503v1>), p. 2.

<sup>89</sup> *Id.* at p. 14.

<sup>90</sup> This is nearly 60% of the eligible U.S. population at the time, *see* Ugander, et al. (2011) p. 2.

<sup>91</sup> Ugander, et al. (2011) p. 2.

1 typical Facebook members are linked (as “friends” and “friends of friends”) in such a way with  
2 the rest of the network as to be able to reach the vast majority of individuals with only a few  
3 “hops” or jumps from one friend to another. Specifically, in the U.S. network the average  
4 distance between people was found to be 4.3 friends and, furthermore, 96% of all Facebook  
5 members were within 5 degrees of separation.<sup>92</sup>

6 50. This high degree of “connectedness” is one aspect of the Social Graph that makes  
7 it attractive for advertisers and why recommendations from Facebook Friends can be so effective;  
8 properly targeted, relatively few recommendations can reach virtually the whole potential market.  
9 Moreover, with interests, brand pages, and other actions, the Social Graph now includes more  
10 data points (“nodes”) and links (“edges”) than just Facebook Friends. It is the targeting, and  
11 specifically the granularity and breath of the targeting information that is enhanced by additional  
12 user–URL links, which Facebook gathered unlawfully from intercepting and scanning private  
13 messages.

14 51. Therefore, the economic value of the benefits Facebook derives from the  
15 unlawfully gathered user–URL links is proportional to the impact of this additional information  
16 on the total information on the Social Graph. In principle, the benefit to Facebook in this respect  
17 would be measured by attributing the corresponding portion of the incremental value of the Social  
18 Graph to the accretion of the unlawfully gathered links.

19 52. In other words, at a point in time (t), the value of the Social Graph to Facebook can  
20 be expressed as the product of the number of links (L) in the Graph times the value, or worth, of a  
21 link (w):

$$V_t = L_t \times w_t$$

23 At the next period (t+1), the value is:

$$V_{t+1} = L_{t+1} \times w_{t+1}$$

25 The change in value to Facebook, the incremental benefit, is then:

$$\Delta V = V_{t+1} - V_t = L_{t+1} \times w_{t+1} - L_t \times w_t .$$

27  
28 <sup>92</sup> Ugander, et al. (2011) p. 5.

1 53. Adding and subtracting the value of today's links at yesterday's unit value ( $L_{t+1} \times$   
2  $w_t$ ):

$$3 \Delta V = L_{t+1} \times w_{t+1} - L_t \times w_t + L_{t+1} \times w_t - L_{t+1} \times w_t$$

4 and re-grouping the components of this equation, we have:

$$5 \Delta V = L_{t+1} (w_{t+1} - w_t) + (L_{t+1} - L_t) w_t$$

6 54. Thus, this equation can be interpreted as stating that: The incremental benefit to  
7 Facebook is the sum of the effect of the change in the value of a link, plus the effect of the change  
8 in the number of links. Only the second component is directly attributable the capture of  
9 additional links, so that the measure of damages (D), with full information, would be calculated  
10 as follows, considering only the unlawfully gathered additional links:

$$11 D = (L_{t+1} - L_t) w_t$$

12 55. The calculation of the total value is straightforward; multiplying the corresponding  
13 link value to obtain the incremental benefit to Facebook.

14 56. The economic benefit to Facebook from the intercepted links can then be  
15 estimated applying the *per link* values, *i.e.*  $w_t$ , to the incremental number of links attributable to  
16 the intercepted messages, *i.e.*  $(L_{t+1} - L_t)$ .

17 57. With the input of the number of intercepted URLs, this value per link estimate can  
18 be applied to determine the total benefit to the defendant.

19 58. All Class members are subject to the accused scanning and, in this sense, are  
20 injured in the same manner, while Facebook benefits from the aggregate information intercepted  
21 out of all the messages.

22 59. Facebook benefits from advertising revenue from adding the user-URL links into  
23 their targeting platform and from enhancing their understanding of how and what users share  
24 links to. The benefit is defined not only by the potential act of generating additional revenue  
25 from targeting ads to the senders of intercepted messages, but also by the additional use in better  
26 targeting these and similar users (in marketing terms); and the benefit is ultimately proportional to  
27 the amount of information intercepted from private messages.  
28

1           60.     Therefore, it is my opinion that a proper attribution of damages among Plaintiff  
2 Class Members, calculated as benefits received by the Defendant, should be based on the number  
3 of links (URLs) intercepted.

4           **B.     Benefits from Inflating the Like Count on Third Party Websites**

5           61.     According to the CAC, Facebook also benefits from using the information  
6 obtained from the intercepted messages by increasing the counter associated with the “Like”  
7 button on third party websites.<sup>93</sup> Independently of the actual advertising revenue as analyzed in  
8 the previous section, Facebook benefits by providing additional perceived value to all Marketers  
9 using these counters to evaluate the effectiveness of Facebook marketing. Due to the wrongful  
10 capture of links, and exacerbated by the double counting, Facebook marketing appeared more  
11 effective to Marketers and, in turn, Facebook’s clients were induced to extend their relationship  
12 with Facebook, not simply by increasing advertising budgets, but at least in part by investing  
13 more in building Facebook Pages and installing a variety of plugins feeding additional  
14 information for Facebook’s targeting and marketing purposes.

15          62.     As explained in this section, the economic benefit derived by Facebook  
16 attributable to one specific way in which it has used the information obtained from the Class  
17 Members messages to increase the “Like” count on its clients’ websites lies between two bounds:  
18 a higher bound represented by the cost that client websites saved by not having to acquire  
19 additional “Likes” calculated at a dollar amount “Y” per “Like”; and a lower bound determined  
20 by the market value of artificially acquired “Likes” for pages made possible by manipulating the  
21 counting system, of a different dollar amount “Z” per “Like.” This amount represents a cost  
22 savings or benefit Facebook was able to provide to its clients directly as a result of the breach of  
23 privacy of messages and identifying URLs of Facebook Marketers. Facebook thus benefits from  
24 the higher usage rates from Marketers incentivized by the higher Return of Investment (ROI) of  
25 the advertising expenditures through the Facebook platform.

26  
27  
28 <sup>93</sup> CAC at §27 and 39.

1           63.     Marketers are interested in increasing the number of “Likes” associated with their  
2 use of the social plugins on their websites outside of Facebook, not simply in growing the number  
3 of “Likes” on their Facebook pages.

4           64.     The importance of Marketers’ website counters being affected by the alleged  
5 unlawful actions in this case resides in the fact that, during the Class period, it was a key  
6 performance indicator of the marketing function for Facebook’s clients: the Marketers or  
7 advertisers on whose websites it was shown. Advertisers, as businesses, are interested in the  
8 return on their expenditures in advertising; the conventional ROI which compares gains from  
9 advertisements with their cost. While the cost is relatively straightforward to ascertain, in the  
10 digital advertising environment, gains from advertising are susceptible to estimation in a variety  
11 of ways, such as by the number of visitors to a web page, the number of incoming links, the  
12 activity on social networks (*e.g.*, followers, comments, “retweets” or “shares,” references in  
13 relevant blogs, views on social media web sites, RSS feed subscribers, among others).<sup>94</sup> In the  
14 Facebook environment, the number of Likes measured is typically interpreted as an indicator of  
15 the reach of an advertising strategy and, given the particular brand/product combination, as a  
16 factor in generating sales.<sup>95</sup>

17           65.     For this analysis, the general principles applied in identifying market valuations of  
18 the economic worth of “acquiring” or “attracting” Facebook users to express their affinity for a  
19 brand are consistent with the general Cost Approach to valuation; the measurement of value by  
20 reference to the amount of money that would be required to replace the functionality of the  
21 subject asset (the Like).<sup>96</sup> Ultimately, the realized value of a specific set of “Likes” would

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22 <sup>94</sup> See, for example, Perdue, D. J. (2010). Social media marketing: Gaining a competitive  
23 advantage by reaching the masses. *Social Media Marketing*, pp. 1, 3–36.

24 <sup>95</sup> By definition, Sales can be seen as the product of marketing reach, times the impact of the ad  
25 (leads per ad), times the yield (sales per lead). Thus, with a given degree of impact and yield, a  
26 higher reach, measured by the Like count for example, generates higher sales. *See, e.g.*: D.  
27 Buhalis and E. Mamalakis, “Social Media Return on Investment and Performance Evaluation in  
28 the Hotel Industry Context,” in: I. Tussyadiah, A. Inversini (eds.), Information and  
Communication Technologies in Tourism 2015, DOI 10.1007/978-3-319-14343-9\_18, pp. 241-  
253.

<sup>96</sup> The underlying assumption is that the price of new assets (*i.e.*, Likes) is commensurate with the  
economic value of service that the property can provide during its life. See: G.V. Smith and R.L.  
Parr, Valuation of Intellectual Property and Intangible Assets, John Wiley & Sons, 2000, p. 164.



1 generally exceed the cost, to a degree depending on the effectiveness of the specific marketing  
2 strategies implemented to leverage them in practice.

3 66. The effectiveness of the then-novel social network advertising campaigns was  
4 typically measured by the number of Likes.<sup>97</sup> Knowledge of the mechanics of this “Like” counter  
5 obviously led to manipulations, such the “purchase” of spurious “likes,”<sup>98</sup> which, at least in one  
6 instance, had a market value as low as \$0.075 per “like” and even deceptive campaigns that  
7 encouraged people to copy and paste in their public Facebook posts certain texts with the  
8 appropriate URLs embedded in them, so the Facebook mechanism would reward the intended  
9 website with a viral increase of “Likes.”<sup>99</sup>

10 67. Ultimately, the meaning of the counter became so diluted by 2013 that both  
11 analytics firms and Facebook changed their assessment of the counter as well as the need for the  
12 button graphic, developing the Facebook pixel and other hidden plug-ins, and began  
13 supplementing these performance measures with other factors.<sup>100</sup>

14 68. Therefore, Facebook benefited from the accused practice of using the results of  
15 scanning supposedly private messages for URLs and affecting Like counts because this practice  
16 gave its clients, Marketers, an incremental impression of effectiveness of their Facebook  
17

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18 <sup>97</sup> Advertising generally strives for the general notion of Reach (“the number or percentage of  
19 target audience members exposed at least once to media carrying an advertising message”). In  
20 the online environment, user activity can be measured in great detail and the number of clicks on  
a specifically-designed button, or other specific user action (including a link or URL), as reflected  
in the Like count provide that measurement.

21 <sup>98</sup> See, e.g., National Public Radio, Planet Money “For \$75, This Guy Will Sell You 1,000  
22 Facebook ‘Likes’” originally broadcast on May 16,  
2012(<http://www.npr.org/sections/money/2012/05/16/152736671/this-guy-will-sell-you-sell-you-1-000-facebook-likes>).

23 <sup>99</sup> Some hoaxes that repeatedly play out in the Facebook context are similar to a “chain letter”  
24 model where users are encouraged to “copy and post” texts such as bogus “copyright”  
25 notifications and spurious claims of privacy claims based on international law. See, e.g., W.  
Oremus, “That Facebook Copyright Notice Is Still a Hoax” November 26, 2012, Slate  
([http://www.slate.com/blogs/future\\_tense/2012/11/26/facebook\\_copyright\\_notice\\_berner\\_convention\\_status\\_update\\_still\\_a\\_hoax.html](http://www.slate.com/blogs/future_tense/2012/11/26/facebook_copyright_notice_berner_convention_status_update_still_a_hoax.html)).

26 <sup>100</sup> Nielsen, the company behind the Ratings system, now emphasizes the notion of ‘Brand Lift’ to  
27 measure the effectiveness of online marketing and, specifically, through Facebook (Nielsen  
28 “Quickly and Accurately Measure the Effectiveness of Your Online Ad Campaigns” available as:  
[www.nielsen.com/content/dam/nielsen/en\\_us/documents/pdf/Fact%20Sheets/Nielsen%20BrandLift.pdf](http://www.nielsen.com/content/dam/nielsen/en_us/documents/pdf/Fact%20Sheets/Nielsen%20BrandLift.pdf)).

1 marketing campaigns. Marketers perceiving an incremental return of their spending on Facebook  
2 campaigns were undoubtedly encouraged to allocate additional funds to these campaigns.

3 69. Due to the success of social online networking, acquiring Likes on Facebook pages  
4 and outside websites has become a fundamental goal for brands in all Business-to-Consumer  
5 markets over the past decade. In studies aimed at estimating the costs of acquiring fans,  
6 advertising industry experts have based their analysis on the average of paid advertising needed,  
7 on average, to acquire a Facebook page “Like” and convert them into paying customers. In 2011,  
8 a study quoted in the well-known trade publication *Advertising Age*,<sup>101</sup> considered 5 million  
9 Facebook ads placed by over 50 companies, the acquisition cost of “Fans,”<sup>102</sup> calculated by  
10 dividing the total cost of clicks by the total number of actions, was found to be \$9.56 less than the  
11 cost to acquire the same level of sales from non-Fans.<sup>103</sup> This is an average of the sampled  
12 companies from mostly the consumer packaged goods, auto and finance. Necessarily, the cost  
13 per acquisition varies by industry, by product, as well as by the desired behavior from potential  
14 customers when visiting the Facebook page. Table 3 shows the average effect summarizing the  
15 findings, comparing the cost of attracting a variety of actions (called “conversion” events)  
16 between Facebook users that previously “Liked” the corresponding brand, *i.e.*, Fans, and visitors  
17 that had not, *i.e.*, Non-Fans.

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24  
25 <sup>101</sup> *Advertising Age*, Nov. 22, 2011.

26 <sup>102</sup> “Fans” standing for Facebook Friends on Brand Pages, is the term typically used in advertising  
27 industry. See, *inter alia*, Peter Elbaor, “The Interconnection of Facebook Fan Pages” October 28,  
2011, ComScore Insights Blog, ([http://www.comscore.com/Insights/Blog/The-Interconnection-  
of-Facebook-Fan-Pages](http://www.comscore.com/Insights/Blog/The-Interconnection-of-Facebook-Fan-Pages)).

28 <sup>103</sup> Study by SocialCode, LLC reported in trade publication *Advertising Age*  
([adage.com/print/231128](http://adage.com/print/231128)).

Table 3  
 Cost per Acquisition (CPA) on Facebook  
 Source: SocialCode, LLC  
 (May-Sept 2011)

Conversion Type	Non-Fan CPA	Fan CPA	Difference
App Install	\$8.49	\$ 2.61	\$5.88
Contest Submission	76.25	17.21	59.04
Contest Voting	21.09	3.26	17.83
Fan Acquisition	5.17	3.39	1.78
Program Sign-Up	75.90	41.25	34.65
Purchase	43.86	12.88	30.98
Sweepstakes Entry	5.81	2.57	3.24
<b>TOTAL</b>	<b>\$ 14.93</b>	<b>\$ 5.37</b>	<b>\$9.56</b>

70. Since Likes can be profitable, as a result of those cost savings, a large number of companies implement marketing strategies to acquire them. Another study found that the average cost of advertising on Facebook to encourage a user to become a Fan – “Like” the advertiser’s Facebook page – was \$1.07.<sup>104</sup> This cost also varies across sectors and over time. In 2012, the cost per acquired Fan (*i.e.*, cost per click in Fan acquisition campaigns) averaged \$0.55.<sup>105</sup> These costs are leveraged through targeting via the Social Graph as brands can gain seven times greater CTR by targeting Fans with ads which keeps cost per click at a minimum.<sup>106</sup>

71. Therefore, the direct incremental impact of the accused practice on Facebook is to increase advertising revenue, in the form of cost savings to advertisers from the accrual of Likes from the intercepted private messages.

<sup>104</sup> Webtrends, White Paper, 2011. Reported in The Wall Street Journal, “How Much Does a Facebook Fan Cost?” February 1, 2011.

<sup>105</sup> Based on data in WebTrends®, “Ads for Fans”, 2012, p. 4.

<sup>106</sup> *Ibid*, p. 2.

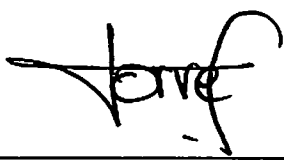
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72. Since the benefits to Facebook are directly tied to the interception of URLs of Class Members' private messages, a proper allocation of damages per Class Member is calculated applying the value of each inflated Like count multiplied by the number of each Class Members' intercepted URLs.

73. The amounts identified in this analysis – the cost savings to advertisers from the accrual of Likes from the intercepted messages – were, in principle, made available to spend on additional Facebook marketing campaigns. This would have been particularly true in light of the false appearance of increase Fan engagement that an inflated Like count would present. To that extent, a fraction of this benefit may have been converted to advertising revenue benefiting Facebook, overlapping enhanced value of the Social Graph addressed in the prior section.

74. With quantitative data on the number of affected "Like" counts, and identification of the affected URLs, it will be feasible to narrow the ranges discussed here and calculate more precisely the potential incremental benefit attributable to the accused practice. Moreover, the calculated effect from incremental advertising revenue during the time when the Like counters were being affected (through December 2012), which would result from the analysis in this section, shall be deducted from the benefits calculated for this period under the methodology described in the previous section for affected Class Members.

Dated: January 13, 2016



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Fernando Torres

# **EXHIBIT A**

**FERNANDO TORRES, MSc**  
**CHIEF ECONOMIST**



Fernando Torres is an intellectual property economist with nearly 30 years of work experience in economics, financial analysis, and business management in the U.S. and Mexico. He is a member and Chief Economist at IPmetrics LLC, an IP consulting firm specializing in the strategic analysis, valuation, and expert witness assessment of the full spectrum of intangible assets.

Since 2004, Mr. Torres has applied his economics, finance and business experience, as well as skills in quantitative techniques, to the analysis and valuation of intangible assets, including valuation for transactional and litigation purposes (bankruptcy and infringement cases). Prior to joining IPmetrics, Mr. Torres served as Senior Economist at CONSOR<sup>®</sup> Intellectual Asset Management.

During recent years, Mr. Torres has undertaken projects involving the valuation and/or the assessment of infringement damages regarding copyrights, trademarks, patents, trade secrets, rights of publicity, and other intellectual assets in such industries as commercial agriculture, auto parts, apparel and footwear, retail, pharmaceuticals, entertainment, telecommunications, social media, as well as non-profit organizations, among others.

Mr. Torres regularly presents on topics related to intangible asset valuation in a variety of venues, many of which qualify for CLE credit. During the past few years, Mr. Torres has been an instructor for the course “Valuing Intangible Assets for Litigation,” which is part of the requirements of the Certified Forensic Financial Analyst designation issued by the National Association of Certified Valuation Analysts (NACVA).

Mr. Torres has been active in the area of the copyrights, privacy and rights of publicity infringement issues, encompassing from the unlicensed use of celebrity images to class action lawsuits involving the major social networking and web services companies.

Mr. Torres is also the editor and author of the online “Patent Value Guide” and his perspectives on the value of patents and other intellectual property assets have been cited in the media, including *Managing Intellectual Property*, *The New York Times*, *Forbes.com*, *Business News Network*, *Business Valuation Resources*, and *The Democrat & Chronicle*.

Mr. Torres is a member of the National Association of Forensic Economics, and of the Western Economics Association International, among others. His career has spanned from academia, to branches of government, to private industry and consulting.

He first earned a B.A. in Economics from the Metropolitan University in Mexico City (1980), and went on to earn a Graduate Diploma in Economics from the University of East Anglia (U. K., 1981), and a Master of Science Degree specializing in Econometrics from the University of London, England (1982).

Prior to specializing in IP, his career centered on financial analysis and management in the private sector, having been both a brand development consultant and an entrepreneur in several business ventures, mainly in the software development and health care industries. During the 1980s, Mr. Torres was Professor of Economics at the Metropolitan University in Mexico City, teaching Economic Policy, Economic Growth, Microeconomics, and Quantitative Methods. Mr. Torres was later a financial consultant (NASD Series 7, 63, 65) for half a dozen years with AXA Advisors LLC.

## PROFESSIONAL ASSOCIATIONS

- National Association of Forensic Economics
- Western Economics Association International
- American Economic Association
- International Trademark Association

## PUBLICATIONS

- “Why only some patents are valuable” in: [IPmetrics Blog](#), (May 13, 2015).
- “General Principle I – Lack of Intrinsic Value” in: [PatentValueGuide.com](#), (February 11, 2013).
- “General Principle II – Patent Use is Key to Value” in: [PatentValueGuide.com](#), (February 8, 2013).
- “Conceptual Patent Value Framework” in: [PatentValueGuide.com](#), (January 31, 2013).
- “The Impact of Reorganization on Trademark Values,” in: [IP Management and Valuation Reporter](#), March 2012, BVR, Portland, OR.
- “Fundamental Principles of Patent Value,” in: [IP Management and Valuation Reporter](#), January 2012, BVR, Portland, OR.
- “Key Factors of Infringement Damages Apportionment in the Java & Android Case” in: [IPmetrics Blog](#), (December 8, 2011).
- Book Chapter: “Valuation, Monetization, and Disposition in Bankruptcy” in [IP Operations and Implementation for the 21<sup>st</sup> Century Corporation](#), John Wiley and Sons, Inc. (November, 2011).
- “Have Patent Litigation Damages Awards Been Worth It?” in: [IPmetrics Blog](#), (April 29, 2011).
- “Celebrity Advertising and Endorsement” in: [IPmetrics Blog](#), (March 2, 2011).
- “The Patent to Trademark Value Transition: Nespresso” [IPmetrics Blog](#), (February 3, 2011).

- “The Liquidation Value of IP” in: IPmetrics Blog, (January 26, 2011).
- “An Econometric Model of Trademark Values” in: IPmetrics Blog, (January 25, 2011).
- Chapter 15: “Copyrights” in Wiley Guide to Fair Value Under IFRS, John Wiley and Sons, Inc. (May, 2010).
- “The Road to Asia,” Feature Article (co-author) in: World Trademark Review, No. 23, February/March 2010, pp. 19-22.
- "Trademark Values in Corporate Restructuring" (July, 2007). Social Sciences Research Network: <http://ssrn.com/abstract=1014741>
- “Establishing Licensing Rates Through Options” (September, 2006) Social Sciences Research Network: <http://ssrn.com/abstract=1014743> and in: [http://formulatorres.blogspot.com/2006\\_05\\_01\\_archive.html](http://formulatorres.blogspot.com/2006_05_01_archive.html)
- Book Chapter: “Ch. 9: Recent developments in Patent Valuation” in: Practising Law Institute, Patent Law Institute 2007: the Impact of Recent Developments on Your Practice, PLI Course Handbook (March 19, 2007).
- “Establishing Licensing Rates through Options,” in: ipFrontline, September 12, 2006 (<http://www.ipfrontline.com/depts/article.asp?id=12586&depid=3>).

## **COURSES AND PRESENTATIONS**

- “What is a Brand Worth?” MCLE webinar, The State Bar of California, Trademark Interest Group, March 2015.
- “Intellectual Property Valuation Techniques,” MCLE presentation for Pillsbury Winthrop Shaw Pittman, San Diego, CA, August 2014.
- “10 Common Mistakes in IP Valuation/Damages”, CLE presentation to Jeffer Mangels Butler & Mitchell LLP, Los Angeles, CA, July 2014.
- “Intellectual Property Valuation Techniques,” MCLE presentation, San Diego, CA, April 2013
- “Intellectual Property Valuation and Monetization,” a seminar for the Special American Business Internship Training (SABIT) Intellectual Property Rights program, U.S. Department of Commerce. March, 2013.
- “Valuing IP in the Context of Bankruptcy,” webinar for the Certified Patent Valuation Analyst curriculum, Business Development Academy. October, 2011.
- “Recent Developments in Intellectual Property Economic Damages,” Presentation at the Annual Conference of the National Association of Forensic Economics. June, 2011.
- “Valuing the Intangible: Where to Start?” CLE presentation to Sheppard Mullin Richter & Hampton, LLP. December, 2009.



- “Defending and Enforcing Your Technology.” Panelist at: Foley’s Emerging Technologies Conference: Navigating a New World – San Diego, CA (Foley & Lardner LLP); September 2009.
- ”Intellectual Property Valuation, Monetization and Disposition in Bankruptcy” – CLE presentation at the Spring Trademark Program of the NY Intellectual Property Law Association – New York, NY; June 2009.
- “Damages Valuation and Expert Witnesses” (co-presenter) – CLE presentations to:
  - Gibson, Dunn & Crutcher LLP – Irvine, CA (June, 2008)
  - Arent Fox, LLP — Washington, DC (April, 2008)
  - Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P. – Washington, DC (April, 2008)
- “Valuing Intangible Assets for Litigation” (Instructor) – National Association of Certified Valuation Analysts (NACVA) – Fort Lauderdale, FL; December 2007
- “Valuing Intangible Assets for Litigation” (Instructor) – National Association of Certified Valuation Analysts (NACVA) – Philadelphia, PA; October 2007
- “Trademark Values in Corporate Restructuring” – Western Economics Association International 82<sup>nd</sup> Annual Conference – Seattle, WA; July, 2007
- “Entrepreneurship and Innovation” (Session Chair) – Western Economics Association International 82<sup>nd</sup> Annual Conference – Seattle, WA; July, 2007
- “Alternative Focuses for ‘But For’ Scenario Specification in Commercial Litigation” (Discussant) – National Association of Forensic Economics, Western Conference – Seattle, WA; June, 2007
- “Patent Values in the Evolving I.P. Market” – Practising Law Institute – Hot Topic Briefing Teleconference; May 2007 (CLE Presentation)
- “Key Issues in Intellectual Property Due Diligence” – Due Diligence Symposium 2007 – ACG – Iselin, NJ; April 2007
- “Life Sciences IP Due Diligence” – American Conference Institute – San Francisco, CA; January 2007
- “Developments in Patent Valuation” – Practising Law Institute – San Francisco, CA; January 2007 (CLE Presentation)
- “Collins & Aikman Europe and Other Cross-Border Asset Sales: A Tale of Two Venues” – American Bankruptcy Institute, Winter Leadership Meeting – Phoenix, AZ; December 2006
- “Valuing Intangible Assets for Litigation” (Instructor) – National Association of Certified Valuation Analysts (NACVA) – San Diego, CA; December 2006.

## LITIGATION-RELATED EXPERIENCE

(Last Four Years)

<b>Date Range</b>	<b>Parties</b>	<b>Case No.</b>	<b>Court</b>	<b>Status</b>	<b>Nature</b>	<b>Hired by</b>	<b>Involvement</b>
February 2012	<b>The Int'l. Aloe Science Council Inc. V. Fruit of the Earth, Inc.</b>	11-CV-2255	United States District Court District of Maryland	Settled	Trademark Infringement.	Kane Kessler, P.C.	Expert Rebuttal Report on Damages, Depositions
March 2012	<b>A. Fraley, et al v. Facebook, Inc.</b>	11-CV-1726	United States District Court Northern District of California	Settled	Rights of Publicity Class Action	The Arns Law Firm	Expert Declarations in Support of Motion for Class Certification, Value of Injunctive Relief, Deposition
August 2013	<b>Jude Law v. Paloform Inc.</b>	SC120354	Superior Court of the State of California (Los Angeles)	Closed	Rights of Publicity	Wilson Elser Moskowitz Edelman & Dicker LLP	Preliminary Expert Damages Report, Arbitration
September - November 2013	<b>Scidera, Inc. v. Newsham Choice Genetics, LLC</b>	AAA 16-174-00582-12	American Arbitration Association	Closed	Contract, Database	Neymaster Goode, PC	Expert Damages Rebuttal Report, Deposition, Arbitration
February 2014	<b>Lambert Corp. v. LBJC, Inc.et al.</b>	13-CV-0778	United States District Court Central District of California	Settled	Copyright & Trademark Infringement	Ezra Brutzkus Gubner LLP	Expert Damages Report, Deposition
April 2014	<b>S. Mattocks v. Black Entertainment Television LLC</b>	13-CV-61582	United States District Court Southern District of Florida	Closed	Intangible Asset Fair Market Value	Tripp Scott PA	Declaration, Expert Damages Report, Deposition
July – Aug. 2014	<b>Tierra Intellectual Borinquen, Inc. v. Toshiba Corporation.</b>	13-cv-47	United States District Court Eastern District of Texas	Settled	Patent Infringement	Ferraiuoli, LLC	Expert Damages Report, Deposition
Aug. 2014- Aug. 2015	<b>S. Abu-Lughod v. S. Calis, Tocali, Inc., ASCII Media, Inc., et al.</b>	13-cv-2792	United States District Court Central District of California	Closed	Contract, Software IP value	Kalbian Hagerty LLP	Expert Rebuttal Reports, Depositions, Trial testimony



<i>Date Range</i>	<i>Parties</i>	<i>Case No.</i>	<i>Court</i>	<i>Status</i>	<i>Nature</i>	<i>Hired by</i>	<i>Involvement</i>
<i>Feb – Mar 2015</i>	<i>S. Nerayoff vs. L. Rokhsar</i>	203157-2012	Supreme Court Of The State Of New York	<i>Closed</i>	Value of Patent Assets	Baker & Hostetler LLP	Expert Declaration on Patent Value, Trial testimony
<i>Jan. - May 2015</i>	<i>In Re Google, Inc., <b>Privacy Policy Litigation.</b></i>	12-cv-1382	United States District Court Northern District of California	<i>Closed</i>	Breach of Contract Class Action	Grant & Eisenhofer P.A.	Expert Report on Privacy Damages, Deposition

# **EXHIBIT B**

Exhibit B - List of Materials Relied On:

I relied on the following documents and materials in forming my opinions:

***Academic Literature***

1. Vogel, Harold L. *Entertainment Industry Economics*. Cambridge University Press, 2011..
2. Smith, Gordon V., and Russell L. Parr. *Valuation of intellectual property and intangible assets*. Vol. 13. Wiley, 2000.
3. Reilly, Robert F., and Robert P. Schweihs. *Valuing intangible assets*. McGraw Hill Professional, 1998.
4. Business Valuation Resources, "Benchmarking Identifiable Intangibles and Their Useful Lives in Business Combinations" 2012, p. 66 (www.bvresources.com).
5. Duff & Phelps, 2015 Valuation Handbook: Guide to the Cost of Capital, John Wiley & Sons, 2015
6. Loumioti, Maria. "The use of intangible assets as loan collateral." Harvard Business School Job Market Paper (2011)., (<http://ssrn.com/abstract=1748675>)
7. Ugander, Johan, Brian Karrer, Lars Backstrom, and Cameron Marlow. "The anatomy of the facebook social graph." arXiv preprint arXiv:1111.4503 (2011). (<http://arxiv.org/abs/1111.4503v1>)
8. Perdue, David J. "Social media marketing: Gaining a competitive advantage by reaching the masses." Senior Honors Papers (2010): 127.
9. Buhalis, Dimitrios, and Emmanouil Mamalakis. "Social media return on investment and performance evaluation in the hotel industry context." In *Information and Communication Technologies in Tourism 2015*, pp. 241-253. Springer International Publishing, 2015.
10. Goldfarb, Avi, and Catherine Tucker. "Shifts in privacy concerns." Available at SSRN 1976321 (2011). (<http://ssrn.com/abstract=1976321>)
11. Tucker, Catherine. "Social advertising." Available at SSRN 1975897 (2012). (<http://ssrn.com/abstract=1975897>)
12. Tucker, Social Networks, Personalized Advertising, and Perceptions of Privacy Control, Time Warner Research Program on Digital Communications, Summer 2011 ([http://209.59.135.49/pdf/TWC\\_Tucker\\_v3a.pdf](http://209.59.135.49/pdf/TWC_Tucker_v3a.pdf)).

### *Articles and Other Online Sources*

1. Business Insider, Business Intelligence Report on Social Engagement (<http://www.businessinsider.com/social-media-engagement-statistics-2013-12>).
2. Business Insider Depiction of Social Graph (<http://static3.businessinsider.com/image/4f5112e169bedd1526000061/facebook-open-graph.jpg>).
3. MarketingLand (<http://marketingland.com/facebooks-latest-tweaks-favor-friends-could-hurt-page-reach-125931>).
4. W. Oremus, “That Facebook Copyright Notice Is Still a Hoax” November 26, 2012, Slate ([http://www.slate.com/blogs/future\\_tense/2012/11/26/facebook\\_copyright\\_notice\\_berner\\_convention\\_status\\_update\\_still\\_a\\_hoax.html](http://www.slate.com/blogs/future_tense/2012/11/26/facebook_copyright_notice_berner_convention_status_update_still_a_hoax.html))
5. Trade publication, Advertising Age, Nov. 22, 2011, ([adage.com/print/231128](http://adage.com/print/231128)).
6. Peter Elbaor, “The Interconnection of Facebook Fan Pages” October 28, 2011, ComScore Insights Blog, (<http://www.comscore.com/Insights/Blog/The-Interconnection-of-Facebook-Fan-Pages>).
7. Webtrends, white paper, 2011. Reported in The Wall Street Journal, “How Much Does a Facebook Fan cost?” February 1, 2011. Based on data in WebTrends®, “Ads for Fans”, 2012, p. 4.
8. Facebook CEO Mark Zuckerberg’s public post on Facebook.com of August 27, 2015, at: (<https://www.facebook.com/zuck/posts/10102329188394581>)
9. Wolfram|Alpha Knowledgebase, using data from the World Bank (<http://www.wolframalpha.com/> accessed 10/26/15).
10. US Census projections and Statistics Canada estimates [In: <http://www.census.gov/population/projections/data/national/2014/summarytables.html>, and <http://www.statcan.gc.ca/pub/91-002-x/2015002/t002-eng.pdf>]
11. “IAB Social Media Buyers Guide” by Facebook’s Adam Isserlis, Manager, Corporate Communications, Ads/Monetization; Colleen Coulter, Product Marketing Communications Manager available on the Interactive Advertising Bureau website (<http://www.iab.net/socialmediabuyersguide>).
12. Facebook for Developers website: <https://developers.facebook.com/>.
13. “Instant Articles” initiative and new deals with publishers like the Washington Post (<http://media.fb.com/2015/05/12/instantarticles/>).

14. Expanding the power of Facebook search (<http://newsroom.fb.com/news/2015/10/search-fyi-find-what-the-world-is-saying-with-facebook-search/>).
15. Video, with video hosting and action tracking (<http://newsroom.fb.com/news/2015/06/news-feed-fyi-taking-into-account-more-actions-on-videos/>), app acquisitions like Instagram and WhatsApp, and with plugins to track activities outside of Facebook
16. Google Products and Advertising Platforms ([www.thinkwithgoogle.com/products/](http://www.thinkwithgoogle.com/products/))
17. “Digital Advertising Report Q3 2015,” Adobe Digital Index ([www.cmo.com/adobe-digital-index.html](http://www.cmo.com/adobe-digital-index.html)), p.18, 24.
18. Open Graph protocol, this is used on Facebook to allow any web page to have the same functionality as any other object on Facebook. See: <http://ogp.me/>.
19. <https://developers.facebook.com/docs/graph-api>
20. Facebook SDK Documentation (<https://developers.facebook.com/docs/javascript/quickstart/v2.5#plugins>).
21. J. Kincaid in: TechCrunch (<http://techcrunch.com/2009/02/09/facebook-activates-like-button-friendfeed-tires-of-sincere-flattery/>).
22. Facebook Help Center (Each Facebook account has a unique username. On a user’s timeline page, their username will appear at the top of the browser and look something like [www.facebook.com/\[username\]](http://www.facebook.com/[username])). <https://www.facebook.com/help/228578620490361>.
23. Facebook, Social Plugins FAQs, at: <https://developers.facebook.com/docs/plugins/faqs/#ref>.
24. Facebook for Business post on November 14, 2014 (<https://www.facebook.com/business/news/update-to-facebook-news-feed>).
25. Facebook Media, “An Update to News Feed: What it Means for Businesses” (<https://www.facebook.com/business/news/update-to-facebook-news-feed>)
26. “News Feed FYI: Balancing Content from Friends and Pages” (<http://media.fb.com/2015/04/21/news-feed-fyi-balancing-content-from-friends-and-pages/>).
27. Facebook’s disclosure in connection with the redesign of the Messenger platform, at: <https://www.facebook.com/notes/facebook-engineering/the-underlying-technology-of-messages/454991608919>
28. Facebook, between August 2012 and May 2013 user engagement, as illustrated in the number of likes generated per day, increased from 2.7 Billion to 4.5 billion on average

- (<https://www.facebook.com/photo.php?fbid=10151908376831729&set=a.10151908376636729.1073741825.20531316728&type=1&theater>).
29. Nielsen “Quickly and Accurately Measure the Effectiveness of Your Online Ad Campaigns” available as:  
[www.nielsen.com/content/dam/nielsen/en\\_us/documents/pdf/Fact%20Sheets/Nielsen%20BrandLift.pdf](http://www.nielsen.com/content/dam/nielsen/en_us/documents/pdf/Fact%20Sheets/Nielsen%20BrandLift.pdf).
  30. National Public Radio, Planet Money “For \$75, This Guy Will Sell You 1,000 Facebook 'Likes'” originally broadcast on May 16, 2012  
(<http://www.npr.org/sections/money/2012/05/16/152736671/this-guy-will-sell-you-sell-you-1-000-facebook-likes>).
  31. <https://www.facebook.com/notes/facebook-engineering/tao-the-power-of-the-graph/10151525983993920>
  32. “Uniform Resource Locators (URL): A Syntax for the Expression of Access Information of Objects on the Network” by Tim Berners-Lee (March 1994) in: <http://www.w3.org/Addressing/URL/url-spec.txt>.
  33. US Census Bureau, Geographical Mobility: 2005 to 2010 (December 2012), Table 2, Page 5 (<http://www.census.gov/prod/2012pubs/p20-567.pdf>).
  34. <https://www.facebook.com/help/cookies/>

***Document produced by Defendant in Campbell et al. v. Facebook, Inc.***

1. FB000012475
2. FB000015766
3. FB000026790
4. FB000026793
5. FB000011745
6. FB000011715
7. FB000008271

***Other Information***

1. Plaintiffs’ Consolidated Amended Complaint filed on April 25, 2014
2. Facebook, Inc. 2014 10-K
3. Facebook, Inc.’s 2015 Q3 Earnings Report (November 4, 2015) At:  
<http://investor.fb.com/results.cfm>
4. Facebook, Inc.’s 2015 Q2 Earnings Report, July 29, 2015
5. Facebook, Inc. 2012 10-K
6. Second Quarter, 2015 Earnings Call held on July 29, 2015. Available at:  
<http://investor.fb.com/results.cfm>.
7. Facebook securities registration statement (SEC Form S-1/A May 16, 2012 p 2).



8. Facebook F8 Developer Conference, April 21, 2010.
9. Facebook, Inc. 2010 10-K Disclosures

# **EXHIBIT 10**

**FILED UNDER SEAL**

# **EXHIBIT 11**

**FILED UNDER SEAL**

# **EXHIBIT 12**

**FILED UNDER SEAL**

# **EXHIBIT 13**



volkswagen 'software device'

Jennifer

All News Images Shopping Videos More Search tools

About 37,400 results (0.66 seconds)



[CARB Shows Test Equipment That Found VW Diesel Def...](#)

Green Car Reports - Feb 5, 2016

**Volkswagen's** diesel-emissions cheating went on for more than six years in part because the company's use of "defeat **device**" **software** was ...



[VW Bites Back: Doubts Diesel Whistleblower, Says Defeat...](#)

Green Car Reports - Jan 29, 2016

Following reports in German newspapers late last week suggesting that the "defeat **device**" **software** was an "open secret" in **VW's** engine ...

[Volkswagen might buy back some Dieseldate cars, now that it's tried ...](#)

Mashable - Jan 29, 2016

[Explore in depth](#) (72 more articles)



[Not Just VW: Internet Offers Diesel 'Defeat Devices' For ...](#)

Green Car Reports - Jan 21, 2016

The **Volkswagen** "defeat **device**" relied entirely on **software** to change an engine's operating characteristics during an emissions test, but many ...



[VW Admits Cheating in the US, but Not in Europe](#)

New York Times - Jan 21, 2016

**VW** executives have already admitted to using the illegal **software** to ... said **Volkswagen** "accepts that a defeat **device** was used in the U.S.A. in ...

[VW rejects call to compensate European drivers over emissions ...](#)

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[Volkswagen denies fitting defeat device in its cars in India](#)

IBNLive - Feb 9, 2016

A cheat or defeat **device** is a **software** in diesel engines to manipulate emission tests by changing the performance of the vehicles to improve ...



[VW Submits V-6 Diesel-Update Plan For Audi, Porsche, V...](#)

Green Car Reports - Feb 4, 2016

Cutting its deadline extremely close, **Volkswagen** submitted a proposed fix for 3.0-liter V-6 TDI diesel models with "defeat **device**" **software** to ...

[VW Submits Fix For 3.0-Liter Diesels To California Officials](#)

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[Oregonians sue Volkswagen in Lane County court over ill...](#)

The Register-Guard - Jan 19, 2016

... sue **Volkswagen** in Lane County court over illegal emissions **device** ... said that clandestine **software** allowing six-cylinder **Volkswagen** diesel ...



### [Defeat devices had been an 'open secret' at Volkswagen...](#)

This is Money - Jan 26, 2016

According to **VW** UK boss Paul Willis, the **software** should not be referred to as a 'defeat device' at all this side of the Atlantic, as he insisted it ...

[VW diesel cheating an 'open secret' within company, report alleges](#)

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### [Supplier Bosch Defends Diesels, Blames VW, Investigate...](#)

Green Car Reports - Feb 1, 2016

Automotive supplier Bosch says it had nothing to do with **Volkswagen's** use of "defeat device" **software** to cheat on emissions tests.



### [Beyond Volkswagen, Europe's Diesels Flunked a Pollutio...](#)

New York Times - Feb 7, 2016

In September, **VW** admitted installing **software** in 11 million diesel ... conceded that the **software** was an illegal defeat device designed to cheat ...



### [Volkswagen AG Sales Coming Back on Track](#)

Business Finance News - Feb 12, 2016

**Volkswagen** AG (ADR) (OTCMKTS:VLKAY) sales have finally returned ... were equipped with the "defeat device" or emissions rigging **software**.



### [Probe Reveals 'Cheat Device' Was Open Secret in Volks...](#)

NDTVAuto.com - Jan 25, 2016

News of **Volkswagen** (**VW**) using 'cheat devices' that tricked ... cheating **software** was an open secret in the engine development department.

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[VW bosses reportedly knew of, discussed 'defeat device' as early as ...](#)

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**Volkswagen** is advertising its "App-Connect" platform, with a video station ... Fiesta will also get those two platforms later this year as **software** updates. ... more of a connected device than other combustion vehicles tend to be.



### [Volkswagen delays earnings report citing "open question..."](#)

Ars Technica - Feb 5, 2016

Worldwide, the number of diesel **Volkswagens** with so-called "defeat device" **software** rises to about 11 million. According to a press release ...

[Volkswagen, Reeling From Emissions Scandal, to Delay Earnings ...](#)

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New York Times - Dec 1, 2015

LONDON — German regulators said on Tuesday that the **software** **Volkswagen** used in many of its diesel vehicles constituted illegal cheating ...

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**Volkswagen** was putting a brave face on its problems with US ... with a **device** that secretly detected when their emissions were being read, to give a ... River Technology gave presentations on the growing role of **software** and ...



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Bloomberg - Feb 7, 2016

No one has died from the emissions-cheating **software Volkswagen** AG ... admitting it created a **device** to fool emissions tests, Mary D. Nichols, ...

[VW haunted by emissions lies as it faces tougher U.S. prosecutors](#)

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["Clean Diesel" Leads to Clean Lawsuit](#)

Local Talk News - Feb 12, 2016

"Our lawsuit alleges that **Volkswagen** put profit ahead of honesty, ... sold under all three brand names with a **software** "defeat **device**" capable of ...

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[VW sinks to 5-year low; Audi extends streak](#)

Automotive News - Feb 2, 2016

WASHINGTON -- **Volkswagen's** U.S. sales fell 15 percent last month, the ... control **software devices** that weren't disclosed as required by law.

[VW Submits Recall Plan for 3-Liter Diesels to CARB, EPA](#)

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